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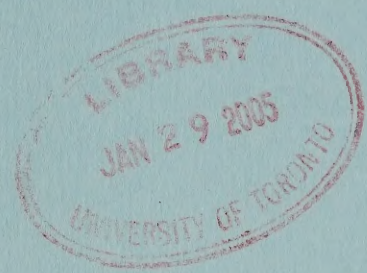
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Reasons for Decision

Sumas Energy 2, Inc.

EH-1-2000



March 2004

Facilities

Canada

National Energy Board

Reasons for Decision

In the Matter of

Sumas Energy 2, Inc.

Application dated 7 July 1999, amended 23 October 2000, for the construction and operation of an International Power Line.

EH-1-2000

March 2004

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Abbreviations

AC	alternating current
ADSS	all-dielectric self-supporting
Amps	Amperes
Aquifer	Abbotsford-Sumas Aquifer
BACT	Best Available Control Technologies
B.C.	Province of British Columbia
BC Hydro	British Columbia Hydro and Power Authority
Board	National Energy Board
BPA	Bonneville Power Authority
Burrard Plant	BC Hydro's Burrard Thermal Power Plant
CCME	Canadian Council of the Ministers of Environment
CEA Act	Canadian Environmental Assessment Act
Certificate	Certificate of Public Convenience and Necessity
CPR	Canadian Pacific Railway
CSA	Canadian Standards Association
dB	decibel
dBA	A-weighted decibel
EFSEC	Energy Facility Site Evaluation Council (State of Washington)
EMF	electromagnetic field
EPN	Early Public Notification
ESR	Environmental Screening Report
FERC	Federal Energy Regulatory Commission (U.S.)
FSEIS	Final Supplemental Environmental Impact Statement
FVRD	Fraser Valley Regional District
GFR	NEB Guidelines for Filing Requirements, 1995

gpm	gallons per minute
Government Intervenors	Province of British Columbia, City of Abbotsford and Fraser Valley Regional District
GHGs	greenhouse gases
GVRD	Greater Vancouver Regional District
IHIL	Ian Hayward International Ltd.
IPL	Proposed SE2 International Power Line in Canada
kg/y	kilograms per year
km	kilometers
kV	kilovolt; 1 000 volts
kW	kilowatt; 1 000 watts
L	litres
MLA	Member of Legislative Assembly
mm	millimetre
MOG	Memorandum of Guidance on Consultation with Aboriginal Peoples
MP	Member of Parliament
MW	megawatt; 1 000 000 watts or 1 000 kW
MWh	megawatt-hour
MWLAP	British Columbia Ministry of Water, Land and Air Protection
NAFTA	North American Free Trade Agreement
NEB Act	National Energy Board Act
NPPC	Northwest Power Planning Council
PM	Particulate Matter
PNUCC	Pacific Northwest Utilities Conference Committee
Power Plant	SE2 proposed Power Plant
ppb	parts per billion

PSD	Prevention of Significant Deterioration
PSHA	Probabilistic Seismic Hazard Assessment
RAC	Referral Advisory Committee
RoW	Right of way
RTO	Regional Transmission Organization
SCA	Site Certification Agreement
SE2	Sumas Energy 2, Inc.
TUS	Traditional Use Study
UAM	urban airshed model
µg	microgram
U.S.	United States of America
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VOCs	Volatile Organic Compounds
WSCC	Western Systems Coordinating Council
XLPE cable	cross-linked polyethylene insulated power cable

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (the NEB Act) and the regulations made thereunder; and

IN THE MATTER OF an application dated 7 July 1999, as amended 23 October 2000, pursuant to Part III, sections 58.16 and 58.23 of the NEB Act for a Certificate of Public Convenience and Necessity to construct and operate an international power line (IPL); and

IN THE MATTER OF Hearing Order EH-1-2000 dated 9 November 2000, as amended;

HEARD in Abbotsford, British Columbia on 18, 19, 20 January 2001; 19 February 2001; 18, 19, 21, 22, 23 October 2002; 26, 27, 28, 29 30, 31 May 2003; 2, 3, 5, 6, 24, 25, 26, 27 June 2003; 2, 3, 4, 5, 7, 8, 9, 10, 11 July 2003; 15, 16, 17, 18, 19, 20, 23 September 2003;

BEFORE:

R.J. Harrison	Presiding Member
D.W. Emes	Member
C.L. Dybwad	Member

APPEARANCES:

Applicant	Representative
Sumas Energy 2, Inc.	R.W. Lusk, Q.C. L.R. Jackie C. Godsoe (of Borden Ladner Gervais LLP)

Associations	Representative
Abbotsford Downtown Business Association	Patrick McMurchy Mary Reeves
Abbotsford Soil Conservation Association	T. Feser Sandra Traichel Lara Tessaro
Straiton Community Association	John Vissers
United Injured and Disabled Workers Association	Barrie Alden
Upper Fraser Valley Chiropractic Association	Dr. Robert Turner

Groups	Representative
Abbotsford Chamber of Commerce	Sat Gill Helen Secco Chris Smith
Abbotsford Community Services	Cheryl Dahl
BC Old Age Pensioners' Organization Agassiz Branch #113	Fred Coates
Canadian Pacific Railway	Robert Lonergan (of Fasken Martineau Dumoulin LLP)
Central Valley Naturalists	Hendrik Jan Saaltink
Coalition to Reduce Electro Pollution	Milt Bowling
Council of Canadians, Mission Chapter	Patricia Cocksedge Vernon Henderson
Fraser Valley Real Estate Board	Paul Cowhig
Generations Affected by Senseless Power	Marian Beddill Marlene Notebloom
Matsqui First Nation	Cynthia Collins
Mission Regional Chamber of Commerce	Lynne Christensen
School District No. 34	John Smith
Society Promoting Environmental Conservation David Suzuki Foundation	Timothy Howard (of the Sierra Legal Defence Fund)
Stó:lō Nation	Ken Malloway Francine Roulston
Thompson Institute for Environmental Studies	R. Madsen
University College of the Fraser Valley	Harold Bassford Wayne Welsh

Governments

Alberta Department of Energy	C.J. Page
District of Mission	Abe Neufeld Joan MacLatchy
Government Intervenors City of Abbotsford Fraser Valley Regional District Province of British Columbia	Michael McAllister James Yardley (of Murdy & McAllister)
Greater Vancouver Regional District	Ali Ergudenler
New Westminster and Regional District	Connie Hoag
Province of British Columbia (in 2001 & 2002)	Chris Jones (of Arvay Finlay)

Individuals

(on their own behalf, unless otherwise indicated)

Emily Aitken	Keith Pincott
Clay Aitken	Keith Pincott
Lorna Allan	Keith Pincott
Garry Allen	
David Andrews	Bob Mills, MP
Rev. Clayton C. Arkesteyn-Vogler	Keith Pincott
Donna Attfield	
Robert Audet	
Erich Baumann	
Lisa Beaumont	
Fred Berge	
Janet Blakely	Keith Pincott
Ruth Blomkvist	
Trish Blondin	
Rudy Bot	Keith Pincott
Leslie Bowling	
Milt Bowling	
Pete Brandsma	Keith Pincott
Dani-Lissa Brisbin	
Sandra Buelens	
Robert (“Bo”) Bumford	Marian Beddill
Karen Burchill	Keith Pincott
William Butler	

Individuals (continued)

Christine Callaghan
Shelley Canning
Dr. Alfred A. Chafe
Grand Chief Dr. Rose Charlie
Kevin Chipperfield
Professor G.S. Christensen
Kenyon Clarke
Dave Clyne
Dr. Donald Cook
Henry Clegg
Ruby Clegg
Marian S. Cockroft
Brittany, Tammy and Sean Conneely
Dr. Anthony Costantino
Jim Cox
Margery Crimp
Ellen Culpin

Debra Dahlgren
Rose Morrison Day
Real Deshaies
Michael de Jong, MLA
Jacob de Raadt
James G. Degen
Don Delparte
Lorna Dieleman
Peter Dieleman
Kathy Dirks
Gladys Dunlop

Menno Ediger
Franklin Eventoff
Michael Ewert
Sandra Farenholtz

Edward D. Fast
George Ferguson
Brian Frankish
Jake Friesen

Elaine Garry
Piergiorgio Giacchini
Ross Calvin Gillanders
Eberhard (Abe) Gotzke

Representative

Margery Crimp

Marion Robinson

Keith Pincott
Gerda Peachey

Margery Crimp
Margery Crimp

Lin James

Christine Johnston

Individuals (continued)

Anne Graham
Elizabeth Gray
Gary Gray
Ivy Gwendoline Gregorig
John Guggenheimer
Sally Guggenheimer

Gwen Hamm
Karl Hann
W.O. Hardbattle
Brian Harvey
Bruce Hasselback
Randy Hawes, MLA
Mary Helen (W.R.) Hatch
Robin Henderson
Vernon Henderson
Josh Hoekstra
Laurie Hoekstra
Christine Horsfield

Beverly James
Lin James
C.M.F.C. Jefferson
Sharon Jensen
Christine Johnston

Sarah Kamp
Rev. Wally Kroguletz

Sylvia Langmann
Maynard Leeland
Cameron Leigh
John Les, MLA
Chris Lint
Ywe Looper
Donna Louie
Charlotte Lucas

Eleanor Marshall
Art Martens
Joe Mattie
Ken Macleod
Gerry Martin
Patricia McAuliffe
Peter McAuliffe

Representative

Kathy Dirks, D. Stuber

Richard Peachey

Betty Leeland
Harald Tilgner

Individuals (continued)

Ross McComb
Rod McCormick
Richard McCullough
Glenda McKinnon
Grant McNally, MP
Patrick McMurchy
Marilyn Merrett
Andrea Mikulan
Audrey Mobley
Sharon Moore-Edwards
Heather Morlacci
John Murphy

Eleanor Noble
Jim Noble

John Parker
Trish Peables
Gerda Peachey
Richard Peachey
George Peary
Barry Penner, MLA
Dirk Petty
Keith Pincott
Sylvia Pincott

Alison Rachel
Christopher Rachel
Dr. John H. Redekop
Faythe Reinheller
Jacqueline Reznick
Valerie Ridsdale
Robert Riedlinger
Diane Robinson
Hank Roos
Charlotte Rosenau
Donald Ross
Patricia Ross

Senator Gerry St. Germain
Jackie Santschi
Mark Schweinbenz
Linda Seale
Kim Shehowsky
Wallace Siemens

Representative

Keith Pincott

Mary Helen (W.R.) Hatch
Mary Helen (W.R.) Hatch

Keith Pincott

Keith Pincott

Christine Horsfield

Keith Pincott
Barney Osborne

Individuals (continued)

Dalton Silver
Kathy Simpkins
Christine Skonberg
Owen Skonberg
John Smeysters
Casey Smit
Wayne Snerle
Dr. O.M. Sovio
Sieglinde Stieda
Chuck Strahl, MP
Diane Stuber

Richard M. Tatomir
Robert Thiessen
Harald Tilgner
Gary Tupper

Barney Usborne

Jack Van Dyke
John Van Dongen, MLA
Rien Van Tilborg
Herman Venema
Wilfried Vicktor
Heidi Village

Ava Waxman
Bernadette Webber
Theresa Westerberg
Randy White, MP
Jean Whittle
Terrance Wilkins
Kathleen Wilkinson
Patricia Cady Williams
Elmer Witt

Basil Fionn Young

National Energy Board

Representative

Marion Robinson

Keith Pincott

Keith Pincott

Patricia Ross

Mary Helen (W.R.) Hatch

Walter Driedger
C.T. Tait

Judith Hanebury, Q.C.
Guy Delisle
Peter Enderwick
Andrew Hudson
Jody Saunders
Marian Yuzda

Chapter 1

Introduction

1.1 Application and Description

This hearing was convened to consider an application by Sumas Energy 2, Inc. (SE2 or the Applicant) for an authorization under the *National Energy Board Act* (the NEB Act) to construct and operate the Canadian portion of an international power line. The U.S. portion of the line would originate at a proposed gas-fired generating plant (Power Plant) to be built by SE2 in Sumas, Washington and extend to the international border. The Canadian portion of the line (IPL) would commence at the international border near Abbotsford, British Columbia (B.C.) and extend approximately 8.5 kilometres (km) from the border northward to BC Hydro and Power Authority's (BC Hydro) Clayburn substation located in Abbotsford. It would be routed on Canadian Pacific Railway (CPR), City of Abbotsford and BC Hydro lands.

The IPL would operate at 230 kilovolts (kV) and would enable SE2 to transmit power from the international border through the Clayburn substation to the main electric grid, which services B.C., Alberta and 11 western U.S. states. No contracted customers for the electricity to be transported on the IPL were identified and SE2 did not apply for authorization to export electricity from Canada.

SE2's original application of 7 July 1999 was made pursuant to section 58.11 of the NEB Act for a permit to construct and operate the IPL. In that application, the IPL was proposed to be located all above ground.

On 29 June 2000, in response to concerns about the IPL expressed at a March 2000 open house conducted by SE2 and in subsequent submissions to the National Energy Board (Board), SE2 elected to change its application to the Board from an application for a permit to an application for a certificate of public convenience and necessity (Certificate). This resulted in SE2's application being considered through a public hearing. SE2 stated that this would allow for the exchange of information with citizens and regulatory agencies in a structured setting. This election would also result in the IPL, if approved, being constructed and operated under federal authority.

On 23 October 2000, SE2 filed a revised application with the Board, pursuant to sections 58.16 and 58.23 of the NEB Act. The revised application included a redesign of the IPL to place a section of the line underground and a modification of the pole design. The redesigned IPL would consist of three sections:

- 4.3 km of overhead transmission line on compact steel monopole structures from the Canada/U.S. border to South Fraser Way;
- 3.5 km of underground transmission cable from South Fraser Way to north of Willband Creek adjacent to the BC Hydro right of way (RoW); and

- 0.7 km of overhead transmission line on standard BC Hydro H-frame structures from the edge of the BC Hydro RoW to the Clayburn substation.

It was in this configuration, as shown in Figure 1-1, that the IPL was considered by the Board in the hearing.

1.2 Chronology of Events

On 9 November 2000, the Board issued Hearing Order EH-1-2000 and established 19 February 2001 for the commencement of the hearing.

On 21 December 2000, SE2 brought a motion requesting the Board to convene a hearing in early January 2001 to consider whether it would be appropriate for intervenors to address the issue of the environmental effects in Canada of SE2's Power Plant to be located in Sumas. The motion, as reformulated by the Board (see Section 1.3 below), was referred to throughout the hearing as the "Environmental Effects Motion". The Board issued a revised Hearing Order on 5 January 2001 setting 18 January 2001 to hear this motion and other motions, but retaining the 19 February 2001 date for commencement of the main hearing. On 18 January 2001, a number of other motions were presented requesting more time to be able to respond to the Environmental Effects Motion. As a result, the date for the hearing of the Environmental Effects Motion was rescheduled to 19 February 2001. The date for the commencement of the main hearing was rescheduled to 23 April 2001.

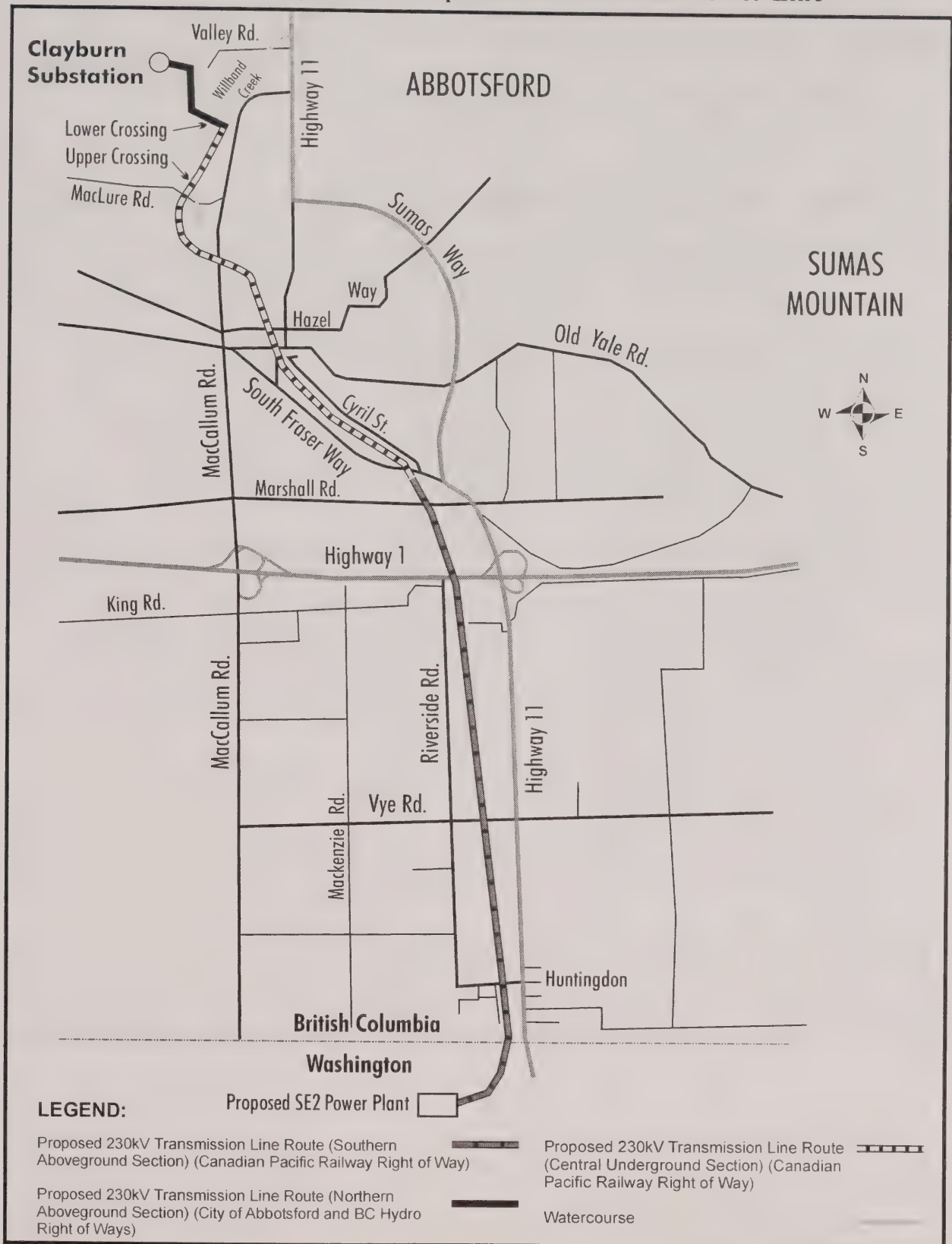
Concurrently with the Board's process, SE2 had applied to the State of Washington's Energy Facility Site Evaluation Council (EFSEC) for authorization to build the Power Plant in Sumas. On 16 February 2001, EFSEC declined to make a recommendation to the Governor of Washington that he approve the application. However, EFSEC stated it would consider a revised application. On 19 February 2001, the Board adjourned the hearing at the request of SE2 and other parties.

On 29 June 2001, SE2 filed a revised application with EFSEC and on 24 May 2002 EFSEC voted unanimously to issue a recommendation to the Governor of Washington to approve SE2's application to build the Power Plant. On 4 June 2002, SE2 requested that the Board reconvene the hearing with respect to its IPL application. On 19 June 2002, SE2 provided an update of changes to the IPL application that had occurred during the adjournment.

On 16 August 2002, the Board issued a Notice of Hearing setting down the date and procedures for oral argument on the Environmental Effects Motion and on two other motions. These motions were heard between 18 and 23 October 2002.

On 9 December 2002, the Board issued its ruling on the Environmental Effects Motion. Also on 9 December 2002, the Board issued an amended Hearing Order setting out dates and procedures for the public hearing. The hearing took place over 30 days in May, June, July and September 2003. However, including the motion hearing days, the Board sat for 39 days.

Figure 1-1
Sumas Energy 2, Inc. Proposed International Power Line



1.3 Environmental Effects Motion

As a result of a motion brought by SE2, the Board posed the following question, which was addressed in what became known as the Environmental Effects Motion:

Should the Board hear evidence concerning the environmental effects in Canada of SE2's proposed power plant to be located in Sumas, Washington?

In its ruling on 9 December 2002, the Board concluded:

The Board considers that there is a direct connection between the Power Plant that SE2 proposes to build in Sumas, Washington and the IPL through Abbotsford, B.C. for which it has applied to the Board for a certificate. Because of this direct connection, the environmental effects in Canada of the plant are relevant considerations to SE2's application before the Board.

The Board therefore concludes that it has the authority under the NEB Act to consider these environmental effects and that there is no reason for the Board to refrain from exercising that authority.

The Board has also concluded that the CEA Act [Canadian Environmental Assessment Act] does not contemplate that facilities located outside of Canada are to be included within the scope of a project located in Canada. Therefore, the Power Plant will not be included within the scope of the IPL project. The question of whether the effects from the Power Plant have the potential to act cumulatively with the effects of the IPL will be considered further during the hearing as part of the Board's cumulative effects assessment under the CEA Act.

The List of Issues was amended by adding the following issue:

The environmental effects in Canada of Sumas Energy 2, Inc.'s proposed power plant located in the State of Washington.

The ruling on the Environmental Effects Motion had an important impact on the scope of the hearing. The complete ruling is set out in Appendix III.

During the course of the EH-1-2000 hearing, the Board considered and ruled on several other motions. The more significant rulings are reproduced in Appendix III to these Reasons.

Chapter 2

Role of the Board

2.1 Public Participation

SE2's application attracted the largest public response of any application ever filed with the Board. More than 400 parties registered as intervenors in the EH-1-2000 hearing and approximately 22 000 Letters of Comment were received by the Board. Such a level of public participation in a Board hearing is unprecedented. There was also widespread public participation during oral portions of the hearing:

- in the January 2001 portion of the hearing, over 90 parties spoke during the three hearing days, with over 400 people attending the first evening; and
- during the 2003 portion of the hearing, 30 intervenors cross-examined various panels; 28 intervenors delivered oral presentations; and 88 intervenors gave oral final arguments.

As a result of the high level of public interest and the general lack of familiarity with the Board's processes, Board staff held a total of nine days of public information sessions to discuss Board processes, but not the merits of the application. The Board also adapted its usual practice to allow for two levels of intervenor participation. Option 1 intervenors were those who desired less than full intervenor status prior to the oral portion of the hearing but who still wished to participate throughout the hearing process. Option 2 intervenors had all the rights and responsibilities of traditional intervenors before the Board. In addition, the Board provided several written procedural updates and other information bulletins to address common requests for information on the Board's processes or to further explain the hearing process.

It appeared to the Board, however, that a number of misconceptions by some intervenors persisted throughout the hearing, particularly with respect to the role of the Board and its legal obligation to proceed in accordance with the principles of natural justice and procedural fairness in considering SE2's application. There also appeared to be a widespread misunderstanding about the nature and extent of the Applicant's responsibility to provide information to intervenors prior to and during the hearing process.

In the Board's view, it is especially important in the context of this particular hearing that all parties clearly understand the responsibility of the Board, as mandated by Parliament and supervised by the courts. The Board has decided, therefore, to elaborate on its role and its processes as a preface to addressing the specific issues raised by SE2's application.

2.2 Mandate of the National Energy Board

The National Energy Board is an independent federal agency that regulates several aspects of Canada's energy industry. Its purpose is to promote safety, environmental protection and economic efficiency in the Canadian public interest in its regulation of pipelines, international power lines and energy development, within the mandate set by Parliament. As part of its

mandate, the Board, as a quasi-judicial tribunal, holds public hearings in order to hear all sides and points of view prior to making decisions on applications for new facilities that fall within its jurisdiction.

In carrying out its quasi-judicial duties, the Board is bound by the principles of natural justice and procedural fairness, under the supervision of the courts of law. These principles have been developed by the courts over centuries, and apply to any public body making a decision that affects the rights, privileges or interests of any person, other than a purely legislative decision.¹ Accordingly, the Board is legally required to adhere to these principles in carrying out its decision-making responsibilities.

2.3 Principles of Natural Justice and Fairness

Mr. Justice Cory stated in *Tandy Electronics Ltd. v. United Steel Workers of America*:²

The concept of natural justice is an elastic one, that can and should defy precise definition. The application of the principle must vary with the circumstances. How much or how little is encompassed by the term will depend on many factors; to name a few, the nature of the hearing, the nature of the tribunal presiding, the scope and effect of the ruling made.

As a result, the content of the principles of natural justice and fairness will vary from case to case. Essentially, what is “fair” requires a balance between what is necessary for the effective and efficient performance of public duties, as mandated under an empowering statute, and what is necessary for the protection of the interests of the parties affected.³

Generally, there are two components to the principles of natural justice and fairness. First, a party must have an adequate opportunity to be heard before a decision is made affecting that party’s interest. The second component is that the decision must be made by an independent decision-maker.⁴ In light of some of the comments made and questions asked during the course of this hearing, further discussion of these components is warranted.

Allowing a party an adequate opportunity to be heard before a decision is made affecting that party’s interest requires that all parties know the case that is to be met and be provided with the opportunity to respond fully and defend their own position. It also requires that the decision be made on the basis of evidence presented, and not on the basis of perception, impression, anecdote or merely the number of people in opposition to, or in support of, an application. Further, such a decision must be made by an independent decision-maker who is objective and impartial. Consequently, anyone submitting an application with the requisite information to the

1 Macaulay and Sprague, *Practice and Procedure before Administrative Tribunals*, (Toronto: Carswell, 2001) [hereinafter “Macaulay”], at p. 9-20.1. Essentially, a purely legislative decision would be one which establishes a standard, norm or rule of conduct binding upon an undetermined number of persons, and which may be driven by policy considerations. Macaulay at p. 9-20.4.

2 (1979), 102 D.L.R. (3d) 126 (Ontario High Court of Justice), at 132.

3 Macaulay, *supra* note 1, at p. 9-20.9 to 9-20.10.

4 *Ibid*, at p. 9-20.8(4).

Board has a legal right to a full and fair hearing before the Board. An applicant is then legally entitled to a decision by the Board based on the facts and evidence presented at such a hearing, in accordance with the statutory requirement on the Board to determine whether an applied-for facility is and will be required by the present and future public convenience and necessity.⁵

It was on the basis of these principles of natural justice and fairness that the Board dismissed the 26 June 2002 motion of Randy White, MP to discontinue the EH-1-2000 hearing. Mr. White requested that the Board, prior to hearing any evidence at the oral portion of the hearing, discontinue SE2's application on the basis of what Mr. White described as the "unanimity" of the views of Canadians.⁶ After considering oral submissions on the motion, the Board stated the following in its 21 October 2002 ruling:

As a court of record, the Board is bound by the principles of natural justice and fairness. One of those principles is the right of an applicant to have its case heard.

As well, Parliament has charged the Board with making its determinations in the public interest. Such determinations can only be made by the Board on the basis of a complete understanding of the affected interests and issues raised by all parties.

Thus, even when faced with widespread opposition to a project at the outset of a hearing, the Board has a duty to hear the applicant, as well as other parties, on the merits of the application before it.

Mr. White's motion seeks to have the Board make its public interest determination without hearing all parties on the merits of the Application. In the Board's view, such an outcome would be contrary to the rules of natural justice and fairness with which the Board must comply.

Natural justice and fairness also require, among other things, that notice be given to other parties whose interests may be affected by an application, so that those parties who wish to participate in a hearing to test the applicant's evidence, provide their own evidence, and provide final argument, have the opportunity to do so. The Board's hearing process is designed to meet its legal obligation to comply with the principles of natural justice and fairness.

The Board was mindful of the nature of this particular hearing, and adapted its usual hearing procedures in recognition of the need to vary the application of the principles of natural justice and fairness to meet the circumstances of this specific case. Accordingly, even though some parties indicated that they were dissatisfied with the procedures followed in this hearing, and that these procedures were "unfair" to parties not represented by legal counsel, the Board is of the view that its procedures in this case were in accordance with the principles of natural justice and fairness, as is legally required.

5 The "public convenience and necessity" test will be discussed further below.

6 The full ruling on Mr. White's motion is contained in Appendix III to these Reasons.

2.4 Assessing an Application

When the Board receives an application, it must initially evaluate whether the application is ready to proceed to a public hearing. The Board does this by assessing the information provided in the application against the information required by the *Guidelines for Filing Requirements, 1995* (GFR) and, in the case of an application for an international power line, by section 5 of the *National Energy Board Electricity Regulations*. If the Board is satisfied that the application meets these threshold requirements for the purposes of a hearing, it issues a hearing order. It is not expected that all of the evidence that the Board will require to make its decision will be provided in the initial application to the Board. Instead, the Board typically allows one or more rounds of information requests; in the EH-1-2000 hearing, the Board permitted several rounds of information requests. In addition, there were further written filings both by the Applicant and by other parties, and the questioning of pre-filed evidence at the oral hearing, to ensure that the Board had as complete a record as possible upon which to base its decision.

An applicant has the onus of persuading the Board that a Certificate should be issued on the basis of all of the evidence presented during the course of both the written and oral portions of the hearing. It is not the role of the Board or its staff to provide evidence to support, or to contradict, the case of the applicant. Intervenor who oppose an application may submit evidence that counters the applicant's evidence; again, however, neither the applicant nor the Board has an obligation to supplement the case for any intervenor by providing evidence in support of, or against, the intervenor's case. While it is up to the applicant to provide evidence in support of its application, intervenors opposing the application generally are expected to provide some form of evidentiary support for their position. Intervenor evidence may then be subject to the same testing as the applicant's evidence, for example, by cross-examination at the hearing.

During the hearing, a number of intervenors pointed out what they felt were deficiencies in the Applicant's evidence and suggested that the Board should dismiss or deny the application as a result.⁷ The nature of applications presented to the Board is such that not every detail in respect of a project must be ascertained before a Certificate may be issued; indeed it would be impractical and unduly onerous, if not impossible, for all details to be provided in advance. Consequently, conditions are routinely attached to approvals, dealing with matters to be addressed prior to construction, during construction and post-construction. In addition, the Board conducts construction and environmental inspections throughout the construction phase of a project, to ensure that any measures not detailed in an application or during a hearing are consistent with any approval given.

At the end of the evidentiary portion of a hearing, all parties have the opportunity to present final argument based upon the evidence before the Board. Final argument is not the time for providing new evidence, as this would be contrary to the principles of natural justice and fairness previously discussed. Sometimes final argument contains statements or comments that are not supported by the evidence on the record. The Board's role in reviewing the evidence and arguments is to ensure that statements and comments made in argument are supported by the evidence on the record, to disregard any statements that are not so supported, and to make its

⁷ See for example, Mr. Degen's motion for the Board to dismiss the SE2 application on the basis of a lack of evidence, and the consequent Board ruling on that motion on 23 October 2002, contained in Appendix III to these Reasons.

determination based solely on the record. To do otherwise would breach the principles of natural justice and fairness.

Further, should a project be approved, the Board has the authority to monitor the company's activities during the construction and operation phases of that project to promote safety of operation of that project, and to ensure that a company is abiding by all of the terms and conditions of its Certificate. To address any noncompliance matters, the Board has various levels of enforcement tools available, up to and including stop work orders and revocation or suspension of the Certificate.

After construction, the Board retains jurisdiction over an approved project, assuming a supervisory and regulatory role for the life of the project. In this role, the Board ensures ongoing compliance with both conditions of the Certificate and with applicable legislation under which the Board has a legislated mandate, such as the *Canadian Environmental Assessment Act* (the CEA Act). As well, the Board is able to deal with any complaints that may arise during the life of the project.

The SE2 hearing provided an opportunity for the Board to hear the views of those parties who may be affected by the IPL. In addition, those parties who were granted intervenor status were provided an opportunity to ask written questions about the evidence on the record, ask questions directly of SE2's witnesses, file evidence of their own and respond to questions on that evidence. Intervenors also had the opportunity to present arguments to the Board and respond to the arguments of the Applicant. In the Board's view, the combined written and oral portions of the EH-1-2000 hearing provided a complete record upon which the Board can base its final decision on whether the IPL is and will be in the present and future public convenience and necessity, as it is required to do.

2.5 Public Interest and the Public Convenience and Necessity Test

The Board has described the public interest in these terms:⁸

The public interest is inclusive of all Canadians and refers to a balance of economic, environmental, and social interests that changes as society's values and preferences evolve over time. As a regulator, the Board must estimate the overall public good a project may create and its potential negative aspects, weigh its various impacts, and make a decision.

As a federal tribunal, the Board must focus on the overall Canadian, or national, public interest. Various decisions of the courts have established that a specific individual's or locale's interest is to be weighed against the greater public interest, and if something is in the greater public interest, the specific interests must give way.⁹

8 See the Board's Internet site at http://www.neb-one.gc.ca/PublicInterestFootnote_e.htm

9 See for example, *Re Actus Management Ltd. and City of Calgary* (1975), 62 DLR (3d) 421, at QL p. 4.

Court decisions and various legal treatises have generally treated “public convenience and necessity” as being synonymous with “public interest”.¹⁰ The Board agrees with the following statements with respect to public interest made by the Ontario Energy Board in a 1985 decision:¹¹

Clearly there are no firm criteria for determining the public interest which will hold good in every situation. Like “just and reasonable” and “public convenience and necessity”, the criteria of public interest in any given situation are understood rather than defined and it may well not serve any purpose to attempt to define these terms too precisely. Rather it must be left to those who have to arrive at a conclusion to strike the balance of “puts and takes”, pluses and minuses, that at the particular point in time are considered appropriate.

The public interest is dynamic, varying from one situation to another, if only because the values ascribed to the conflicting interests alter. It follows that the criteria by which the public interest is served may also change according to the circumstances.

The Supreme Court of Canada’s decision in *Memorial Gardens Assn. (Can.) Ltd. v. Colwood Cemetery Co.*¹² is one of the leading cases cited with respect to the meaning of “public convenience and necessity”. In this case, Mr. Justice Abbot made the following comment:

[I]t would, I think, be both impractical and undesirable to attempt a precise definition of general application of what constitutes public convenience and necessity. As has been frequently pointed out in the American decisions, the meaning in a given case should be ascertained by reference to the context and to the objects and purposes of the statute in which it is found.

The Board also agrees with the recent comments made by a Joint Panel of the Alberta Energy and Utilities Board and the Alberta Natural Resources Conservation Board, which stated:¹³

[I]n order to establish whether the project is in the public interest, the Panel must understand its potential economic, social, and other benefits and then determine whether these balance or outweigh the project’s costs and negative impacts on the environment, public health, and safety and other social and economic matters.

10 Macaulay, *supra* note 1, at p. 8-6.

11 E.B.R.O. 118, 119, 1985.

12 *Memorial Gardens Assn. (Can.) Ltd. v. Colwood Cemetery Co.*, [1958] SCR 353 at 357.

13 Report of the EUB-NRCB Joint Review Panel: Glacier Power Ltd., Dunvegan Hydroelectric Project (25 March 2003), EUB Decision 2003-020, at p. 10.

In the Board's view, under the NEB Act, the factors to be considered and the criteria to be applied in coming to a decision on public interest or public convenience and necessity may vary with the application, the location, the commodity involved, the various segments of the public affected by the decision and the purpose of the applicable section of the NEB Act.

2.6 The Board's Past Comments

In October 1997, the Sable Joint Public Review Panel, in one of its rulings, cited the *Memorial Gardens* case, and concluded:¹⁴

Thus, it has been held that the test of public convenience and necessity is primarily a matter of reasoned opinion, based upon an appropriate factual basis, that is within the sole discretion of the regulatory body.

In the Alliance Pipeline Ltd. Comprehensive Study Report in GH-3-97, the Board stated the following with respect to the factors it looks at under "public interest" in section 52 of the NEB Act:¹⁵

When it receives an application for a certificate of public convenience and necessity, the Board has an obligation to consider environmental matters under both the CEA Act and as part of its consideration of the public interest under section 52 of the NEB Act. Under the CEA Act, the Board considers the factors set out in the scoping document, while under the NEB Act the Board has the discretion to decide what factors are relevant in determining the public interest. For example, the CEA Act requires a consideration of socio-economic effects only if they result from an environmental effect of a project. The Board usually considers a broader range of socio-economic effects when considering an application under the NEB Act.

In the Alliance Pipeline Ltd. Reasons for Decision in GH-3-97, the Board stated:¹⁶

A large-scale project such as that proposed by Alliance inevitably raises the potential for commercial impacts on persons other than the owners and users of the pipeline. Paragraph 52(e) [public interest] of the NEB Act enables the Board to consider these potential impacts in its overall assessment of whether the applied-for project is in the public convenience and necessity. Other aspects considered under this paragraph include environmental protection, socio-economic impacts, and public safety.

14 *Joint Public Review Panel Report*, Sable Gas Projects, dated October 1997, pp. 129-130. The Joint Panel Report was considered in the *National Energy Board GH-6-96 Reasons for Decision*, Sable Offshore Energy Project and Maritime and Northeast Pipeline Project, dated December 1997.

15 *National Energy Board GH-3-97 Alliance Comprehensive Study Report*, Alliance Pipeline Ltd. on behalf of the Alliance Pipeline Limited Partnership, dated September 1998, at p. 9.

16 *National Energy Board GH-3-97 Reasons for Decision*, Alliance Pipeline Ltd. on behalf of the Alliance Pipeline Limited Partnership, dated November 1998, at p. 8.

In the Northstar Energy Corporation GH-1-98 hearing, the Board discussed public interest generally.¹⁷

In reviewing NEC's application, the Board must consider whether the addition of these pipeline facilities to the existing Canadian pipeline infrastructure is in the public interest. In doing so, the Board must, after carefully weighing all of the evidence in these proceedings, exercise its discretion in balancing the interests of a diverse public. The interests of those members of the public who would benefit from the construction of this pipeline must be weighed against the interests of those who may be adversely affected by its construction.

In the GH-2-2000 Reasons for Decision on the AEC Suffield Gas Pipeline Inc. application, the Board commented on the public convenience and necessity test as follows:¹⁸

It is important to note that Parliament did not find it necessary to specify how the factors set out in the section [52], or any other factors that the Board might consider relevant, are to be examined and applied. The Supreme Court of Canada has indicated that the public convenience and necessity test is predominantly the formulation of an opinion by the tribunal. This opinion must be based on the record before it; that is to say, the decision must be based not only on facts but with the exercise of considerable administrative discretion. The unequivocal failure of an applicant to satisfy the Board on a single critical component (such as, for example, the ability to finance the project) may be enough for the Board to conclude that, on that fact alone, the project cannot be found to be in the public convenience and necessity. However, such failure on a single factor is unlikely. More common is the situation presented to the Board by this application, where the evidence in one or more of the areas of examination is stronger than that presented with respect to other relevant matters or than has been presented in other applications. In such cases, the Board will, on the basis of the evidence before it and within the specific circumstances of each application, apply administrative discretion and expertise in its overall determination of whether the applied-for pipeline is required by the present and future public convenience and necessity. Further, while the Board may be guided by past decisions, it need not be bound by them.

2.7 Applying the Test in the EH-1-2000 Hearing

During the course of this hearing, several parties raised the public convenience and necessity test, and the criteria that the Board should consider in making its decision in the public interest. For example, the Province of B.C., the City of Abbotsford and the Fraser Valley Regional

17 *National Energy Board GH-1-98 Reasons for Decision*, Northstar Energy Corporation, dated May 1998, at p. 27.

18 *National Energy Board GH-2-2000 Reasons for Decision*, AEC Suffield Gas Pipeline Inc., dated August 2000, at p. 22-23.

District (Government Intervenors) submitted that the Board should focus primarily on the benefit and harm to Canada and that the benefit of SE2's proposal to Canada must be both significant and probable. Their view was that the evidence was not persuasive in this context. The Government Intervenors also stated that, in order to approve SE2's application, the Board would have to find a clear necessity for the project that unmistakably outweighed its harm to Canada; in their view, SE2 had not met that test.

SE2 disagreed with the Government Intervenors' position that the benefits of its project must be both significant and probable, and stated that this requirement was neither legal nor appropriate. SE2 asserted that it had clearly established that significant benefits would accrue to Canada as a result of the project going ahead and that other generators would not provide similar benefits, as suggested by the Government Intervenors. SE2 added that, in a competitive market, an increased number of competitors, in and of itself, should be viewed as beneficial.

Subsections 58.16(1) and (2) of the NEB Act provide as follows:

58.16 (1) The Board may, subject to section 24 and to the approval of the Governor in Council, issue a certificate in respect of

...

(b) an international power line in relation to which an election is filed under section 58.23,

...

if the Board is satisfied that the line is and will be required by the present and future public convenience and necessity.

(2) In deciding whether to issue a certificate, the Board *shall have regard to all considerations that appear to it to be relevant*. [emphasis added]

The effect of the language in subsection 58.16(2) is that the Board has a very wide discretion. Based on the decision of the Federal Court of Canada in *Union Gas v. TransCanada PipeLines Ltd.*¹⁹, the only apparent limit on the exercise of that discretion is good faith.

In *Canadian National Railways v. Canada Steamship Lines Limited*²⁰, the Privy Council, in construing the words "all considerations which appear to it to be relevant", which are the same words as used in subsection 58.16(2) of the NEB Act, held:

It would be difficult to conceive a wider discretion than is conferred on the Board as to the considerations to which it is to have regard in disposing of an application for the approval of an agreed charge. It is to have regard to "all considerations which appear to it to be relevant". Not only is it not precluded negatively from having regard to any considerations, but it is enjoined positively to have regard to every consideration which in its

19 [1974] 2 F.C. 313.

20 [1945] 3 D.L.R. 417 at 420.

opinion is relevant. So long as that discretion is exercised in good faith, the decision of the Board as to what considerations are relevant would appear to be unchallengeable.

In the Board's view, this wide discretion was intended to apply to section 58.16. While the factors that the Board will consider may vary in the circumstances of the case before it, there are certain factors that are typically addressed in facility applications. For example, socio-economic, environmental and public safety concerns are usually raised in the context of public interest considerations, and were examined in this hearing as well. The Board heard evidence on early public notification, routing, engineering design and safety issues, economic considerations, environmental effects of the IPL and the environmental effects of the Power Plant in Canada and aboriginal consultation. These issues are addressed in more detail in the following chapters. The Board has determined that all of these factors are relevant to its decision. Accordingly, the benefits and burdens that would result from the project in all of these areas must be weighed prior to the Board's final determination of whether the IPL is and will be required by the present and future public convenience and necessity.

2.8 Conclusion

In conclusion, decisions by regulatory tribunals such as the National Energy Board are not made by conducting a plebiscite or merely on the basis of a demonstration of public opposition or support. Rather, such decisions are made within a legal framework enacted by the legislature and applied by the courts. This is, of course, the essence of the rule of law.

In this case, the applicable legal framework is found in the NEB Act, which requires the Board to make a determination with respect to "the present and future public convenience and necessity", in the Canadian public interest. The requirement imposed by the courts is that, in making that determination, the Board must rely only on the facts that are established to its satisfaction through the hearing process, and must otherwise proceed in compliance with the principles of natural justice and the requirements of procedural fairness. The Board must perform its duty on the basis of principle within a structured framework, while following a process that meets the requirements imposed by the courts.

Chapter 3

Early Public Notification and Land Matters

Part II of the Board's GFR sets out the requirements for the proponent of a project to conduct an Early Public Notification (EPN) program. The EPN program gives persons who may be affected by a project the opportunity to learn about the project and to provide input into its design. Specifically, the EPN program is a means for the proponent of a project to:

- seek public input into the design, route selection and potential environmental and socio-economic effects of the project;
- respond to any public issues; and
- work with the public to resolve any relevant concerns.²¹

The EPN program occurs before the filing of an application; thereafter the applicant may continue to consult with interested persons throughout the regulatory and construction phases of the project.

As part of its overall assessment of a proposed project, the Board also considers land matters related to route selection, the lands required for the project, and the land acquisition process.

3.1 Early Public Notification

In its original application filed in July 1999, SE2 stated that the objectives of its EPN program were to gain public support for the project, to ensure that stakeholders were informed of all aspects of the IPL and to engage stakeholders in meaningful consultation and issues resolution. The consultation activities conducted by SE2 prior to filing its original application included:

- advance notification to key stakeholders prior to general release of the project announcement;
- a project briefing to the mayor of the City of Abbotsford;
- a project presentation to staff of the City of Abbotsford;
- discussions with BC Hydro;
- presentations to federal and provincial agencies including the Fraser Valley Regional District (FVRD) and the Lower Fraser Valley Air Quality Coordinating Committee;
- discussions with the three owners of lands over which the IPL would cross, being the City of Abbotsford, CPR and BC Hydro; and
- a public open house meeting conducted in Abbotsford in July 1999.

After filing its application, SE2 conducted a second open house in March 2000. Prior to its open house meeting, SE2 sent a mail-out to over 900 Abbotsford residents and owners of property

²¹ Aboriginal consultation regarding the SE2 project is addressed in Chapter 7 of these Reasons.

located close to the proposed IPL route. The open house meeting was attended by approximately 300 individuals from Abbotsford and other Fraser Valley communities. On 29 June 2000, SE2 filed a written summary of the public concerns it had received as a result of the open house meetings. The concerns were related primarily to the potential for adverse effects on the Fraser Valley airshed as a result of the operation of the Power Plant in Sumas. Other concerns included the effects of electromagnetic fields that would surround the IPL, nuisance buzzing and noise from the IPL, effects on radio reception, and impacts on property values. In order to address certain of these concerns, SE2 decided to construct a 3.5 km portion of the IPL route underground, including a portion that is located near residential areas in Abbotsford.

In its amended application filed on 23 October 2000, SE2 provided an update to its EPN program. SE2 stated that it continued to consult with the City of Abbotsford, directly affected landowners, government agencies and other stakeholders.

In its January 2001 response to Board information requests, SE2 stated that, since the filing of the amended application in October 2000, it had ensured that copies of the amended application were made available at local libraries in Abbotsford, Chilliwack, Mission and Langley, and in Sumas. It also published notices in local papers to advise the public of the locations of the amended application. In addition, SE2 stated that in response to the high level of concern expressed by the public, it had decided to file an election pursuant to section 58.23 of the NEB Act because the hearing process would allow for the exchange of information with stakeholders and regulatory agencies in a structured setting. SE2 noted that the Board's public information sessions, conducted by Board staff in November 2000, and the publication of the Board's Hearing Order EH-1-2000 in November 2000, further assisted the public in learning about the project and the hearing process.

In its February 2003 response to Board information requests, SE2 stated that it had attempted to meet with the B.C. Ministry of Water, Land and Air Protection (MWLAP), the Greater Vancouver Regional District (GVRD), the FVRD and Environment Canada. It also stated that its consultant, MFG, Inc. was scheduled to appear before the Lower Fraser Valley Air Quality Coordinating Committee in October 2002, but was notified prior to the meeting that members of the committee did not accept SE2's participation.

Views of the Board

The Board notes that SE2 initiated its EPN program in 1999 and provided several opportunities for interested persons to participate in the EPN process. The Board also notes that the EPN program generated considerable local interest in the IPL project, as evidenced by the thousands of letters received by the Board from local citizens, government, interest groups and aboriginal groups. As a result, the Board is satisfied that the public received adequate notification of the IPL and was provided an opportunity to comment and to express any concerns to SE2. The Board notes that in response to concerns expressed by the public during the early public notification phase, SE2 decided to construct a portion of the IPL underground through areas of high population density.

The Board is satisfied that the EPN activities conducted by SE2 prior to filing its amended application were appropriate. In the event that the Board were to issue a Certificate for the IPL, it would expect that SE2 would continue to communicate with the affected public during construction and, where appropriate, during operation and maintenance of the IPL.

3.2 Land Matters

3.2.1 IPL Route Selection and Land Requirements

SE2 stated that the nearest substations to the Power Plant in the U.S. are the Bonneville Power Authority (BPA) Custer substation in Custer, Washington and the BPA Dewey Road substation in Bellingham, Washington, both of which are approximately 38 km from the Power Plant.

SE2 filed a copy of Whatcom County Ordinance No. 90-124, which states that within Whatcom County, Washington, the location of electrical power transmission lines of greater than 115 kV is restricted to lands where permits have already been granted or to those districts classified as industrial. SE2 stated that the construction of a 230 kV transmission line within Whatcom County to connect to either of the two BPA substations is not permitted by the ordinance.

SE2 stated that because of the restrictions imposed by the Whatcom County ordinance, connecting the Power Plant to the transmission grid in the State of Washington would require the construction of two 115 kV transmission lines, one to each of the substations noted above. SE2 stated that the ordinance does not apply within Sumas where that portion of the route of the IPL that is within the U.S. would be located.

As a result, SE2 selected the BC Hydro Clayburn substation for the end point of the IPL, since the route to the Clayburn substation avoids the Whatcom County restrictions. The Clayburn substation is the nearest (9.35 km) to the Power Plant and it operates within the requisite 230 kV to 500 kV range.

SE2 stated that the IPL would proceed generally in a northerly direction from the Power Plant, following the Burlington Northern Railway RoW within the State of Washington. The IPL would utilize the CPR RoW for most of the route in Canada; portions of the Canadian route would be located on land owned by the City of Abbotsford and BC Hydro. According to SE2, the proposed route is the environmentally prudent choice because the CPR RoW presents a natural, unobstructed corridor for the IPL and contains several existing power lines and other linear facilities. In Canada, the route passes through light industrial and commercial zoning, with approximately 350 metres of the route adjacent to residential zoning.

In its election filed on 29 June 2000, SE2 stated, in direct response to concerns expressed by the City of Abbotsford, the Abbotsford Chamber of Commerce, the Abbotsford Downtown Business Association and residents of Abbotsford regarding adverse impact to property values, that it had decided to construct a portion of the IPL underground. The underground portion would be constructed from South Fraser Way to north of Willband Creek, adjacent to the BC Hydro RoW,

for a distance of 3.5 km. This would include the portion of the proposed route that is adjacent to residential zoning.

SE2 stated that the proposed RoW is 11.5 metres wide within Canada, and within the 30-metre wide CPR RoW for most of its length.

3.2.2 Land Acquisition

SE2 described its negotiations with each landowner as follows:

- SE2 has been negotiating with BC Hydro for an interconnection agreement, which would include the use of BC Hydro fee simple lands. In its June 2002 letter to the Board, SE2 stated that it was still negotiating with BC Hydro. In its February 2003 response to Board information requests, SE2 stated that there had been no change of status since the June 2002 update;
- SE2 has been dealing with the City of Abbotsford for several years. In response to Board information requests in January 2001, SE2 stated that the City refuses to negotiate the terms of use of its land; and
- In its January 2001 response to Board information requests, SE2 stated it had been negotiating with CPR for a land acquisition agreement. CPR stated in correspondence to SE2 in February 2001 that it would not negotiate with SE2 until all required approvals are in place and the locally affected stakeholders are in agreement.

In its February 2003 response to Board information requests, SE2 stated that there have been no developments with respect to the service of notices on landowners pursuant to subsection 87(1) of the NEB Act.

CPR also filed a letter with the Board in January 2001 wherein it indicated that it would not enter into an agreement for the use of its RoW if it is determined, through the appropriate assessments, that the project (including the impacts of the Power Plant) presents a risk to its employees, the community or the environment.

In final argument, Mr. White noted that in correspondence he received from CPR dated 6 June 2002, CPR stated that it was not negotiating nor did it have any arrangement with SE2 for the IPL. Mr. White submitted that, if the Board approved the IPL, SE2 would likely be required to expropriate the lands it required from CPR.

Views of the Board

The Board notes the Whatcom County ordinance restricts the location of new power transmission lines greater than 115 kV to either industrial zoned lands or existing utility corridors. In addition, the Board notes SE2's evidence that the effect of the ordinance would be that two power lines would need to be constructed in order to transmit the electrical power generated at the Power Plant to the nearest substations within the State of Washington.

The Board accepts SE2's rationale for selecting the general route of the IPL. The Board also finds that the land requirements for the IPL are appropriate.

With respect to the land acquisition process, the Board notes that SE2 and the landowners are currently at a stalemate in negotiations. In its ruling on Mr. Degen's motion on 23 October 2002, the Board addressed the question of whether it can consider the SE2 application in the absence of finalized land acquisition agreements between SE2 and the landowners. The Board ruled as follows:

The Board is of the view that the answer to this motion can be found within the scheme of the NEB Act. The requirements for an application for a certificate for an international power line as set out in section 5 of the National Energy Board Electricity Regulations do not include the filing of final land acquisition agreements. The NEB Act does not require that the land acquisition process be completed at the time an application is filed or even before a certificate is issued.²²

Chapter 4

IPL Design and Engineering

4.1 IPL Description, Electrical Design and Operation

The IPL would consist of the following three sections, as shown in Figure 1-1 in Chapter 1:

- 4.3 km of overhead transmission line from the Canada/U.S. border to South Fraser Way;
- 3.5 km of underground transmission cable from South Fraser Way to north of Willband Creek adjacent to the BC Hydro RoW; and
- 0.7 km of overhead transmission line from north of Willband Creek to BC Hydro's Clayburn substation.

SE2 retained the firm of Ian Hayward International Ltd. (IHIL) to design the IPL. The basic electrical circuit design is a radial three-phase single circuit alternating current (AC) line, with the sole purpose of transmitting power from the Power Plant to BC Hydro's Clayburn substation.

The IPL would be built for and operated at a nominal voltage level of 230 kV. SE2 indicated this voltage would be appropriate to support the minimum amount of power transfer capacity needed from the line – a nominal 660 megawatts (MW) – while at the same time producing low voltage drop and line losses. As well, this voltage would allow SE2 to build the southernmost overhead section of the IPL using a compact pole design to minimize both costs and space requirements along the route. It would also permit the northern end of the IPL to terminate onto existing 230 kV facilities at the Clayburn substation. No parties questioned SE2's selection of 230 kV as the line's voltage, which would also be its maximum design voltage level.

SE2 indicated the design documents and drawings were of preliminary design type. Some of the study work that would be required to complete the line's final design was preliminary as well. SE2 indicated that final design work for the IPL would be undertaken at a date closer to the IPL's actual construction. All design and construction of the IPL would be reviewed for approval by BC Hydro. Further, the IPL would be under the operational control of BC Hydro and SE2 would contract maintenance of the line to BC Hydro or another qualified party.

4.2 Overhead Section

The southern overhead section of the IPL, extending from the Canada/U.S. border to South Fraser Way, would be constructed using a vertical phase conductor arrangement on steel compact monopole structures. With the exception of transitional structures at the border and where this section of the IPL interconnects with the underground section, poles would be either 25, 28, 31 or 35 metres in height. Preliminary line layout drawings indicated that most poles would be 25 metres in height; however, pole height selection at a specific location would depend upon line clearance requirements.

The northern overhead section of the IPL, extending from north of Willband Creek to the Clayburn substation, would generally be constructed using BC Hydro H-frame type structures on fully treated wood poles. The height of these structures would depend on required clearances near the Clayburn substation.

The phase wiring of the overhead sections of the IPL would be two-conductor bundles of nominal 1033.5 MCM 37/0 AAC, commonly known in industry as “Bluebell” conductor. SE2 indicated that, based upon certain assumed conditions, the winter season electrical current and power transfer capacities of the overhead sections of the line would be 3004 Amps and 1197 MW, respectively, while summer capacities would be 2080 Amps and 829 MW, respectively. In addition, the pole structures would carry a small ADSS fibre-optic cable for power system operations communications between the Clayburn substation and the Power Plant. SE2 understands that CPR would not permit SE2 to place any additional communications cables or systems equipment on structures built along its RoW.

SE2 submitted that its designs for the overhead sections of the IPL were based on line loading conditions laid out in CAN/CSA standard C22.3 No. 1-M87 entitled “Overhead Systems”. It indicated that the IPL’s design conductor-to-ground clearances for maximum sag exceed the standard’s minimum required values by one metre or more. SE2 subsequently stated that its designs of the overhead sections of the IPL would be revisited to comply with the version of CAN/CSA standard C22.3 in effect at the time that the final line design is completed, and that the design of these line sections would also comply with the standard’s “Heavy Loading” or comparable criteria then in effect.

Some intervenors expressed concern regarding the effect of seismic events on the overhead sections of the IPL. SE2 suggested that the highest risk of seismic event-induced soil liquefaction would be on the southern overhead section of the IPL, but stated that seismic risk would be taken into account in the design and that pilings for the poles would be driven deep enough so as to be in solid non-liquefiable soils.

The Government Intervenors and others questioned whether SE2’s designs for the overhead sections of the IPL sufficiently addressed the potential loadings on the line posed by high winds. SE2 submitted that although detailed meteorological studies were not done, the designs complied with CAN/CSA standard C22.3 No. 1-M87’s “Medium Loading B” criteria. SE2 further stated that it had based its design on existing lines in the area and that the design was more conservative than BC Hydro’s own 500 kV transmission line towers near the Clayburn substation, as SE2 had used higher wind speeds in its calculations.

Intervenors also expressed concern that the IPL would produce noise - humming or buzzing - or create interference with radio or television signal reception. SE2 stated that no such effects would be produced by the underground section of the IPL and that such effects would be unlikely from overhead sections of the line as they are normally not encountered on 230 kV lines. SE2 provided calculated values of the noise levels expected from the overhead sections of the IPL, noted that there are presently no legislated limits for such noise and also indicated that the levels expected would be below levels deemed acceptable by authorities in B.C., Canada and the U.S. SE2 provided calculated values indicating that emissions causing radio interference from the IPL to points at or beyond the edge of the IPL’s RoW would be below maximum values

established by Industry Canada. Similarly, SE2 suggested that, on the basis of its calculated values for radio interference and the operating experience of major Canadian utilities, it did not expect that operation of the IPL would produce any unresolvable television interference complaints for antennae placed at or beyond the edge of the RoW. It also committed to resolving all legitimate television interference complaints that might occur.

4.3 Underground Section

SE2 proposed that the section of the line from South Fraser Way to north of Willband Creek be constructed underground. SE2 indicated that, despite the fact that this change would result in higher costs, it would take this action to reduce the visual impact of the line in the area.

SE2 proposed to construct the underground section of the IPL using XLPE type cable in a cable trench. Phase wiring would be single conductor per phase, with cables separated by fixed spacers placed on the level bottom of the trench. Phase cables would be protected from physical contact or damage from either side by concrete sidewalls. Protection from above would be via a concrete cover cap supported by the protective sidewalls. There would generally be no protection from below as no unintentional contact with the line would be expected from this direction. Voids produced around the cables and spacers by the sidewalls and cap would be filled with concrete-bound sand. Burial depth of the cover cap below grade would vary from about 1.5 metres to a minimum of 1.0 metre. A minimum 1.5 metres depth of cover would be used where the line crosses under roadways or railway tracks. A 1.0 metre depth would be used elsewhere, to the extent possible, to minimize concerns arising from the dissipation of heat generated by the cables. This section of the IPL would also continue the run of ADSS communications cable. SE2 stated that the winter season and summer season transfer capacities of the underground section of the IPL would be the same. Based upon certain assumed conditions, line portions buried at 1.0 metre depth would have capacities of 1898 Amps and 756 MW and portions buried at 1.5 metres depth would have capacities of 1817 Amps and 724 MW.

SE2 submitted that its design of the underground section of the IPL was based upon the application of good engineering judgment and not upon a specific CAN/CSA standard. While CAN/CSA standard C22.3 No. 7-94 entitled "Underground Systems" does exist and is the latest applicable standard in Canada for underground systems, SE2 noted that the standard is specifically applicable only for voltages of up to 150 kV, whereas the IPL would be a 230 kV line. However, SE2 advised that it used CAN/CSA standard C22.3 No. 7-94 as guidance for its submitted design and asserted that its final design of this section of the line would comply with any applicable CAN/CSA standard that might be in effect at the time that final IPL design work is undertaken.

Several intervenors expressed concern about the underground section of the line. These concerns included the use of XLPE cable, impacts on buried infrastructure, and seismic issues.

SE2 acknowledged that XLPE cable had not previously been used for high voltage transmission lines in B.C. or, to the best of its knowledge, anywhere else in Canada. However, it indicated that such cable had been used in other parts of the world, particularly Australia, Southeast Asia and Europe, over the past 15 to 20 years. SE2 also indicated that it was unaware of XLPE cable having been used for a 660 MW-capable line operating at 230 kV and that the cables would have

to be specifically designed for this use. SE2 asserted that suitable cables could be acquired via a world-wide competitive bid process, and used as planned for the IPL. SE2 noted that its tender specifications would require the successful bidding supplier to acquire or produce cable capable of meeting its needs. SE2 stated that the lack of use of XLPE cable in Canada was not a consequence of Canadian weather patterns. According to SE2, BC Hydro did not use XLPE cable because it was not compatible with BC Hydro's existing system.

The Government Intervenors and others expressed concern that IHIL did not have experience with underground power lines at voltages above 25 kV or with such lines specifically at 230 kV using XLPE cable. SE2's witnesses conceded that they did not have this experience. SE2 further stated that "the technology comes with the product" and that SE2's expertise would "develop as the cable is laid". As a result, they concluded that such expertise would eventually exist in B.C. In addition, SE2's witnesses stated that IHIL would only act as the project manager for the underground section of the IPL and that SE2 would engage the services of an expert cable services company to design, supply and install this section of the IPL. Further, SE2's plan to acquire cable expertise worldwide from a major company was typical in the industry given the expense of maintaining such expertise and the frequency of its use. The SE2 witnesses also stated that consulting with manufacturers when preparing a design that used this type of cable was a common practice followed by most in the industry, including BC Hydro.

SE2 acknowledged that it did not have maintenance and repair records and statistics for XLPE cables, although they were likely available from suppliers, and that some insulation breakdowns had occurred in early days. SE2 suggested that such problems had likely now been addressed by manufacturers. SE2 advised that if a breakdown of the XLPE cables' insulation occurred, the cables would not leak oil as the insulation is a solid material (polyethylene), unlike the oil-filled cables presently used by BC Hydro. In addition, SE2 advised that no significant electrical effects would ensue or endure upon the occurrence of a breakdown because the IPL's protective equipment would disconnect the line immediately, *i.e.*, within a sub-second timeframe from the occurrence of an electrical fault. As a result, SE2 indicated that it did not believe that an insulation breakdown event would pose a safety risk. SE2 stated that damaged cable would be repaired by removing and replacing the damaged section with a spliced-in section of new cable.

CAN/CSA standard C22.3 No. 7-94 indicates that there must be at least 300 millimetres (mm) separation between the underground section of the IPL and infrastructure such as water and sewer lines. The Government Intervenors expressed concern that this section of the IPL would not be based on CSA standards and that the City of Abbotsford might have to maintain more than 300 mm separation from the IPL, potentially incurring higher costs when it repaired existing works or was installing new works. In addition, they expressed concerns regarding other standards that might be applicable to the underground section of the IPL, codes of conduct that the City would have to follow to work around this section of the IPL, and whether the City would have to apply to the Board every time it wished to work near the IPL. As well, the City wished to understand the potential consequences of unintended contact with the IPL or of a ruptured water pipe in proximity to the line.

SE2 stated that the separation from the underground section of the IPL for a given work would be set using engineering judgment, as this section of the IPL would not be subject to CSA or other standards. SE2 submitted that this is typical in the industry and provided the example of

BC Hydro's 500 kV lines as other utility facilities not covered by CSA standards. SE2 indicated that 300 mm would likely be the minimum separation distance, but that the separation for a given situation would depend on the soil type at that location and that separations of less than 300 mm were allowable. It noted that the City would have to respect the set separations when carrying out any work on its present and future works, similar to what is required in relation to other utility works, including gas pipelines or telephone lines. SE2 noted that its installation of the IPL would also have to respect these separations from other existing and foreseeable utility works in the same manner.

The IPL would be sheathed by a concrete cover cap, marked with marking tape and have posted surface warning markers to minimize the potential for unintended contact. SE2 clarified that the term 'separation' between the IPL and other works meant the separation between the outer sides or top of the IPL's concrete sheathing and those works, and not between the IPL's cables and the works. Accordingly, SE2 stated that any unintended contact made with the IPL while attending to other utility works would likely be with the IPL's concrete sheath, not the IPL's cables.

SE2 advised that, in the event of a burst pipe, water would have no effect on an undamaged XLPE cable. If the cable were damaged, the IPL's protection system would automatically take the cable out of service in a very short period of time. It also indicated that portions of IPL cable trench passing over the top of existing water pipes would likely be provided with underside bridging to prevent subsidence of the cables or their sheathing in the event of a rupture.

SE2 indicated that there are regulations for work conducted around underground power lines. SE2 further noted that it would be the responsibility of the construction force itself to ensure that it worked in a safe manner around the IPL. SE2 clarified that most work around the underground section of the IPL could likely be done while the IPL remained energized. SE2 was unable to comment upon the question of whether the City would have to apply to the Board in the event that the City needed to undertake such work.

The Government Intervenors also expressed concern regarding the potential for seismic events to induce liquefaction of the soils in which the underground section of the line would be buried, the effect such an event could have on the IPL, and how line design might address that risk. SE2 stated that, based upon the preliminary geotechnical report it had submitted, the soils were not likely susceptible to liquefaction. However, SE2 also indicated that further evaluation of these soils would be done during the final line design phase of the IPL. If liquefaction were found to be a concern, this would be identified in the design specifications and addressed in the final design.

4.4 Impact of the IPL on Interconnecting Facilities

SE2 indicated that the IPL would terminate on new and existing BC Hydro equipment, in an available bay within the Clayburn substation's existing secured (*i.e.*, fenced) area. Two new 230 kV substation breakers would be required to terminate the IPL; however, no other ancillary equipment or expansion of the substation footprint would be required. SE2 indicated that some additional work, in the areas of metering, protection, control and communications, would also be required to integrate the IPL into BC Hydro's systems at the Clayburn substation. All costs for the termination of the IPL would be borne directly by SE2.

In its 1999 report²³, BC Hydro accepted the IPL as a single circuit line but suggested a two circuit line could improve reliability. In a subsequent Facilities Study report²⁴ issued in 2000, BC Hydro revisited the power flow, voltage stability and transient stability studies undertaken in the 1999 report. Both reports concluded that for all study conditions investigated, no BC Hydro system components would be overloaded, nor would there be any unacceptable voltage conditions during contingencies. The reports also indicated that the addition of SE2's Power Plant would not reduce BC Hydro's reactive power reserve margins. As well, the reports indicated that transient stability performance would be acceptable for the various system faults modelled. Accordingly, both the 1999 and 2000 reports concluded that SE2's Power Plant could be connected to BC Hydro's system at the Clayburn substation. SE2 submitted that, by extension of this finding by BC Hydro, the IPL would not impact the power systems of other provinces.

In order to use BC Hydro's transmission system to deliver power to market, SE2 would need to secure transmission service from BC Hydro. In its response to SE2's completed application for such service, BC Hydro indicated that the Power Plant could be connected and the service request accommodated. However, BC Hydro noted that interconnection of the IPL to BC Hydro's facilities at the Clayburn substation would require certain additions and upgrades to BC Hydro's transmission network in order to ensure firm export capability for SE2 on the B.C.-U.S. intertie. Specifically, overhead line upgrades (conductor clearance improvements) on one 500 kV and two 230 kV circuits, two shunt reactor additions and the implementation of new generation-scheduling remedial action schemes would be required. The costs incurred by BC Hydro for these items would be recouped through transmission tariffs charged to SE2 for such service.

Views of the Board

While several elements of SE2's design for the IPL remain incomplete or preliminary in nature at this time, the Board does not find this an unusual situation for a project of this type. These elements may be appropriately addressed through Certificate conditions as discussed below, and as set out in Appendix II.

The Board notes that a number of intervenors raised concerns with SE2's design and plans for the operation and maintenance of the IPL, but provided no evidence that challenged the technical or safety aspects of the design, construction or operation of the IPL. Nevertheless, these concerns have been given due consideration by the Board.

The Board notes that BC Hydro would have operational control of the IPL. In addition, SE2 intends to have BC Hydro review and approve the design and construction of the IPL. Accordingly, should a Certificate be issued, the Board would require SE2 to file documentation, prior to

23 BC Hydro Report No. NPP9901 entitled "A Preliminary Feasibility Study to Integrate the Sumas 710 MW Generation into the BC Hydro System at Clayburn Substation" dated February 23, 1999; submitted by SE2 in Appendix 6 of its October 2000 Amended Application.

24 B.C. Hydro Report No. NPP2000-8 entitled "Facilities Study for Sumas Energy 2 Inc. Generating Station" dated September 2000; submitted by SE2 in Appendix 6 of its October 2000 Amended Application.

construction, that demonstrates that the design of the IPL complies with the applicable utility standards and interconnection requirements of BC Hydro (Condition B11 in Appendix II). The Board would also require SE2 to file documentation that demonstrates the IPL, as built, is in compliance with BC Hydro's utility standards and interconnection requirements (Condition C4 in Appendix II).

SE2 also intends to contract the operation and maintenance of the IPL to BC Hydro or another qualified third party and has committed to incorporating BC Hydro's operating procedures into the resulting operating and maintenance agreement. Accordingly, should a Certificate be issued, the Board would require SE2 to file documentation demonstrating that SE2 has arranged for the operation and maintenance of the IPL to be carried out by qualified persons and in accordance with the standards and procedures set out in its Operations and Maintenance Manual prior to the operation of the IPL (Condition C3 in Appendix II). In addition, leave of the Board would be required before SE2 could terminate or otherwise modify arrangements or commitments made in relation to the operation and maintenance of the IPL (Condition C3 in Appendix II). The Board would also require SE2 to file its Operations and Maintenance Manual, and its Emergency Response Plan for the IPL, prior to operation, as well as documentation demonstrating that CPR has been given an opportunity to comment on these manuals (Conditions C1 and C2 in Appendix II).

As the construction and operation of the IPL would affect CPR's railway system, the Board would require SE2 to file evidence of CPR's acceptance of SE2's detailed Electromagnetic Compatibility Study to be completed during the IPL final design (Condition B7 in Appendix II). The Board would also condition any Certificate issued to require filing of SE2's safety manual with documentation demonstrating that CPR has been given an opportunity to comment on the safety manual (Condition B14 in Appendix II).

The Board notes that the power transfer capacity of the IPL would be greater than the output capacity of the Power Plant. To ensure that the IPL would be used only for the purposes described in SE2's application or as otherwise adduced in its evidence, the Board would restrict the line's allowable transmission rate to a nominal 660 MW (Condition A3 in Appendix II) and restrict its use to transmitting only electricity generated by the Power Plant (Condition A4 in Appendix II).

In the Board's view, conditions with respect to audible noise and radio or television interference from the IPL would not be warranted as SE2's design meets applicable standards and SE2 has made commitments in this regard.

The Board is of the view that SE2 has exercised good engineering practice and brought acceptable experience and judgment to bear concerning the proposed design, construction, operation and maintenance of the IPL; however, notwithstanding this view, the Board would require SE2 to file, for approval, its quality assurance and compliance program for the IPL should a Certificate be issued (Condition B13 in Appendix II).

Based upon the conclusions provided by BC Hydro in the 1999 and 2000 reports²⁵, the Board is satisfied that the IPL would not impact the power systems of other provinces if it were approved and built.

25 *Supra*, notes 23 & 24

Chapter 5

Need and Justification for the IPL

In Hearing Order EH-1-2000, the Board identified the need for the IPL as a relevant issue in determining whether the IPL would be in the “present and future public convenience and necessity”. Although the application before the Board is for the IPL alone, the IPL is needed only if the Power Plant is constructed. In recognition of this fact, SE2 provided evidence on the economic justification for both the Power Plant and the IPL. In particular, SE2 provided evidence on the market that the Power Plant could be expected to serve, on the effects on the regional transmission grid from the construction of the Power Plant, on the direct benefits arising from the construction of the IPL and Power Plant, and on other possible benefits. Other parties also made submissions on these matters.

5.1 Market Demand

5.1.1 Position of SE2

SE2 stated that there is a need for the electricity that would be produced by the Power Plant and that the IPL is the most effective way of bringing the power to market. SE2 defined its potential market region as the provinces of B.C. and Alberta, as well as the states of Washington, Oregon, Idaho, Montana, Wyoming, Utah, Colorado, California, Nevada, Arizona, and New Mexico. However, due to the progressively higher costs of moving power away from the location of the generation facility, and the higher likelihood of encountering constraints on the transmission system, SE2 indicated that, in practical terms, its most likely market region would be in areas that are geographically proximate to the Power Plant. In particular, SE2 noted that the Puget Sound basin, Tacoma, Seattle, Everett, and the Lower Mainland area of B.C. are forecast to continue to have rapid growth, with a corresponding need for additional electricity, and that those are the areas SE2 is intended to serve.

In support of its view that the generation from the Power Plant is needed by the market, SE2 presented forecasts from the BPA *White Book*, the Pacific Northwest Utilities Conference Committee (PNUCC) *Northwest Regional Forecast* reports for 2002, and analyses produced by the Northwest Power Planning Council. These analyses indicated that a growing power deficit exists in the SE2 market region. SE2 stated that, although market demand for electricity had declined as a result of the western power crisis of 2000-2001 and the economic downturn in the region, a deficit still existed. Further, the demand for electricity was expected to return to the previously estimated forecast levels by 2005. More specifically, SE2 noted that the annual demand increases in the market region, including B.C.’s Lower Mainland, were expected to average 330 MW per year between 2003 and 2025. According to SE2, this implied a need for a power plant of the size of SE2’s Power Plant to be added to the region every two years.

SE2 indicated that the need for additional power was also driven by the fact that, in recent years, the region’s hydro-electric power systems have been strained beyond their capacity. SE2 stated

that traditional low-cost hydroelectric generation facilities would not be developed in the future due to fishery and other environmental concerns, and that hydro-electric power systems were not able to meet present or future needs. As a result, new sources of clean and efficient natural gas-fired electricity, such as would be provided by the Power Plant, would be needed.

5.1.2 Position of Intervenor

Several intervenors expressed concerns relating to SE2's market analysis. Intervenor noted that industrial demand for electricity had declined and the market continued to be weak. In addition, they stated that thousands of MW of new generation had entered the market since the California electricity crisis of 2000 and 2001. Intervenor indicated that the Northwest Power Planning Council's listing of Washington State power plants showed that there was no shortage of power plants in the region and that existing power plants did not operate at peak capacity for any length of time.

With respect to B.C., intervenors stated that SE2's evidence regarding future provincial electricity supply and demand balances should be discounted, as the forecasts SE2 presented either omitted or ignored planned new capacity by BC Hydro and future capacity savings from B.C.'s Power Smart program and other programs. It was also stated that SE2 had ignored Alberta's potential role in meeting future power needs.

Certain intervenors held the view that acquisition of power from SE2 would not be in line with provincial energy policy. They suggested that this policy specified that new supply should be located domestically and should be reliable. As the Power Plant would be located in the U.S., and as SE2 viewed its market area as extending beyond the borders of B.C., it did not meet these criteria.

Intervenor articulated several conclusions resulting from their concerns. First, demand for electricity in SE2's market region would remain at the low end of the ranges presented by SE2.

Second, BC Hydro would not need new power resources until 2007 and would not require SE2's output to meet demand, since lower cost alternatives would likely be available. In particular, Dr. El-Ramly, an expert witness for the Government Intervenor, indicated that the Power Plant would not add to the pool of low cost power providers for B.C. He based this conclusion on his analysis of the historic spark, which suggested that a plant such as SE2 would have been able to operate and cover a reasonable spark spread only 43 percent of the time between 1997 and 2002.

Finally, the intervenors were of the view that SE2 had not presented a balanced analysis of regional needs into the future, nor had SE2 adequately demonstrated that there would be a future need for its power.

5.1.3 Response of SE2

Although acknowledging that the demand for electricity had fallen off temporarily, SE2 stated that the principal forecasting organizations in the region continued to forecast power deficits and increased peak requirements for each year between 2003 and 2008. In addition, SE2 noted that in approving the Power Plant siting, EFSEC found that both Washington State and the U.S. Pacific

Northwest region “face a need for increased energy and/or capacity in the very near term”, and that the U.S. Pacific Northwest “is in energy deficit”. SE2 suggested that the Board should give some deference to EFSEC regarding market need.

Further, SE2 noted that B.C. is increasingly integrated with the U.S. Pacific Northwest and the North American electricity markets. SE2 explained that its market is regional and that equal consideration must be given to both the U.S. and Canadian components of the market.

While recognizing intervenors’ views concerning BC Hydro’s Power Smart program and the potential for alternative sources of low cost power in the Pacific Northwest, SE2 noted that the ability of cleaner sources to meet demand often depends on the time of year and access to the generation source.

In response to suggestions that the acquisition of power from SE2 would not be in accord with provincial energy policy, SE2 noted that B.C. had relied on imports of electricity for some time, and that this had not been of concern to the province. SE2 was of the view that open access transmission would allow a variety of potential purchasers within B.C., such as aluminum companies, pulp and paper facilities, and power marketers, to purchase SE2’s power.

With respect to Dr. El-Ramly’s spark spread analysis, SE2 indicated that it would be an inappropriate consideration for the Board, as the marketplace would determine the profitability of SE2. Nonetheless, SE2 suggested that the analysis was flawed. Specifically, SE2 indicated that Dr. El-Ramly had been selective in choosing the data used for analysis and that his heat rate and spark spread assumptions did not reflect the actual conditions of the Power Plant. Although SE2 noted that historical prices are poor indicators of future competitive market prices for any commodity, it went on to state that the average competitive prices cited by Dr. El-Ramly for 2000 and 2001 were higher than the expected cost of operating the Power Plant and would fully justify the construction of the SE2 generating facility. Further, SE2 stated that the spark spreads Dr. El-Ramly calculated for 2000 and 2001 show that for more than 90 percent of the time, the Power Plant could operate with at least a five dollar per megawatt-hour spark spread.

5.2 Market Structure Impacts

5.2.1 Position of SE2

In addition to helping meet market demand, SE2 indicated that the Power Plant could have other beneficial market impacts.

First, SE2 suggested that the connection of the Power Plant to the grid through the IPL would be in accordance with the spirit of open access, which had been beneficial to B.C. SE2 submitted that there had been a transition from a monopolistic market for electricity to a more competitive market. This change was driven by the U.S. Federal Energy Regulatory Commission (FERC), which, beginning in 1996, required the unbundling of wholesale power services and transmission services, and required transmission owners to provide non-discriminatory transmission access, regardless of ownership or affiliation.

While open access transmission is regulated in the U.S. by FERC Order 888 (introduced in April 1996), many Canadian jurisdictions and utilities, including BC Hydro, have voluntarily complied with these orders. This compliance provides Canadian producers with increased trade opportunities by allowing them to export directly to U.S. energy consumers. Specifically, SE2 noted that between 1992 and 1997, B.C. electricity export revenues averaged \$150 million annually. This was contrasted with Powerex Corporation's 2001 power export value of more than \$5 billion, which was achieved under FERC open access. According to SE2, this was clear evidence that B.C. has benefited significantly from being able to sell power directly to U.S. customers.

Second, SE2 suggested that the increased competition created by the addition of SE2 power to the regional supply would help reduce power prices, as there is a direct economic relationship between available power supply and the competitive market price of power. While lower power prices might reduce BC Hydro revenues, competitive prices would benefit B.C. and the region. In particular, increased competition could reduce the cost of power throughout the region during periods when incremental demand would otherwise be met by power plants that are higher cost and less efficient in terms of emissions rates.

Third, SE2 stated that the strategic location of the Power Plant with the IPL connecting to the BC Hydro grid close to the Lower Mainland of B.C. would allow B.C. to import power for domestic consumption when it was needed to meet domestic demand and allow power from SE2 to be exported to the U.S. when it was not needed locally.

Finally, SE2 stated that the location of the Power Plant and IPL could benefit B.C. in terms of potential transmission savings. As the Power Plant would be located close to B.C.'s largest load centre, imports of SE2 power to B.C. could result in avoided or delayed transmission reinforcement costs (estimated to be approximately \$250 million with a lead time of eight to twelve years), reduced transmission losses, enhanced Lower Mainland reliability, and increased export capacity from the province. SE2 stated that the document titled *Energy for our Future: A Plan for British Columbia* (B.C. Energy Plan) indicates the provincial government's support of smaller-scale facilities, such as smaller gas-fired plants, because they are located close to load centers. This close proximity would assist in minimizing transmission costs, and help avoid transmission losses and infrastructure costs, while at the same time providing regional economic benefits.

5.2.2 Position of Intervenorors

With respect to SE2's suggestion that approval of the IPL would be in accordance with the spirit of open access, the Government Intervenorors, and others, argued that the FERC open access policy does not imply an automatic right to connect to the grid. According to these intervenors, the SE2 application is for a new facility and a new connection, while the intent of the FERC open access policy is to ensure that existing generation facilities be afforded open access to existing transmission facilities. They argued that denying the application would not contravene the FERC open access policy and that in assessing the merits of the IPL, the Board's first duty should be to protect the Canadian interest.

Some intervenors also disputed the suggestion that the increased level of competition in the electricity market resulting from the addition of the power from the Power Plant would be beneficial for Canadians. In particular, Dr. El-Ramly, testifying on behalf of the Government Intervenor, stated that the Power Plant's impact on the region would depend on the way its power was sold and committed. Dr. El-Ramly described three possible contracting scenarios that SE2 could arrange, and the potential outcome of each in terms of the impact on Canadian power markets.

In the first scenario, Dr. El-Ramly stated that SE2 would operate on a merchant basis, selling its power output on the spot market. In this scenario, B.C. could purchase power from SE2's Power Plant during low cost periods and export power during high cost periods. According to Dr. El-Ramly, this would be beneficial for B.C. when it imports, but not when it exports. When B.C. exports power, power from SE2's Power Plant would compete in B.C.'s export markets with the result that export revenue for B.C. would be reduced, leading to higher electricity rates for B.C. consumers. Another disadvantage to B.C. under this scenario would be that SE2 would compete with B.C. for transmission access on the B.C.-U.S. intertie. Dr. El-Ramly also noted that under this first scenario, Alberta could purchase SE2 power during high-demand, high-cost periods instead of purchasing power from B.C. or Saskatchewan, which would divert potential revenue away from BC Hydro. Under cross-examination, Dr. El-Ramly conceded that Alberta would only purchase SE2 power if it was the lowest cost power available, implying a beneficial outcome for Alberta in this circumstance.

Dr. El-Ramly's second scenario outlined the potential outcome if SE2 made long-term contractual arrangements with a non-B.C. entity. In this situation, either an Alberta or a U.S. entity would contract with SE2 and in either case, according to Dr. El-Ramly, B.C. would experience lower electricity trade revenues, as SE2 would be successfully competing in BC Hydro's and Powerex's traditional market. This could result in reduced export revenues for B.C. and lead to higher rates for B.C. consumers. If SE2 power was contracted to a U.S. entity, SE2 power would be competing with B.C. for transmission access, which Dr. El-Ramly considered a detriment to B.C. As in his first scenario, Dr. El-Ramly's position was that if Alberta imported SE2 power, this would be damaging to B.C. However, as previously noted, he later acknowledged that Alberta would only purchase power from SE2's Power Plant if it was the lowest cost power available.

The third scenario described by Dr. El-Ramly is the situation where SE2 power was contracted on a long-term basis to a B.C. entity. In this scenario, B.C. would benefit, as SE2 power would be used to serve B.C. load and would not compete for transmission access.

Dr. El-Ramly's general proposition was that, overall, the addition of power from SE2's Power Plant to the market region would be detrimental to B.C. and Canada as SE2 would compete in the market to which B.C. traditionally exported power, and would compete for capacity on the B.C.-U.S. intertie. These two factors would result in a reduction in B.C.'s electricity export revenues, which have been used to offset electricity rates paid by B.C. consumers. Dr. El-Ramly estimated that for every ten percent that B.C.'s electricity export revenues are reduced, domestic electricity rates would increase by one percent.

These views were echoed by other intervenors, such as the Central Valley Naturalists and Mr. White, who argued that, depending on the type of contractual arrangements eventually made, SE2 could undermine the efforts of independent B.C. suppliers and future Canadian projects to get access to the provincial transmission grid and find a market for their power. Similarly, John van Dongen, MLA, argued that with the addition of power from SE2's Power Plant on the system, BC Hydro and the Province of B.C. would not only lose the transmission line capacity on a short, though strategic, piece of transmission line, but would also incur a significant opportunity cost due to the effect of crowding on the line for the short distance power from SE2 is wheeled back to the U.S.

The Government Intervenor further argued that the addition of power from the Power Plant would increase congestion on the transmission system. Supported by the Central Valley Naturalists, the Government Intervenor submitted that SE2 would compete with B.C. for transmission access and that the transmission system in B.C. and its interconnection with the power systems south of the border would have to be strengthened at considerable expense to avoid compromising BC Hydro's capability to trade power.

Intervenor also disputed SE2's suggestion that the construction of the SE2 facility could lead to transmission system savings. The Government Intervenor argued that there was no strong evidence that with the IPL, there would be cost savings on transmission to B.C. or Canadians. They noted that information relating to cost differentials between the Power Plant and the Province's hydro dams, in terms of location of generation relative to load, had not been provided.

5.2.3 Response of SE2

With respect to concerns that SE2 would compete with B.C. generators for access to the transmission grid, SE2 acknowledged that transmission constraints exist between the U.S. and B.C., and that SE2 would be a competitor for transmission access. However, SE2 suggested that if this was of concern, entities such as BC Hydro could purchase available capacity under long-term contracts to ensure that sufficient transmission capacity would be available to them. SE2 stated that if present transmission constraints significantly limit BC Hydro's ability to market its power into the U.S., it would be in BC Hydro's economic interest to ensure that the constrained transmission system was upgraded to remove or reduce the constraints. SE2 noted that utilities are presently taking steps to reduce or remove some of the transmission constraints on the interties between B.C. and the U.S.

SE2 noted that the FERC has ordered the formation of Regional Transmission Organizations (RTOs) in the U.S. to remedy transmission system inefficiencies caused by poor regional coordination and undue discrimination by present transmission system owners. SE2 explained that FERC policies are designed to encourage the development of adequate transmission and generation infrastructure. SE2 noted that while the details of how Canadian transmission will actually be integrated into the RTOs have not been fully developed, Canadian utilities are presently working closely with U.S. utilities to plan a seamless integration of wholesale transmission services in B.C. and Alberta with the RTO West transmission systems (the RTO with which B.C. and Alberta utilities would be affiliated). SE2 stated that the B.C. Energy Plan outlines policy that would make it easier to integrate B.C. transmission operations with those of

U.S. utilities in RTO West and that the B.C. Energy Plan recognizes the importance of maintaining access to U.S. competitive power markets.

With respect to concerns that SE2 would compete with B.C. electricity generators for markets to the detriment of the Province, SE2 submitted that the operation of the Power Plant and potential contracts with future power purchasers could not be conveniently categorized into Dr. El-Ramly's three scenarios. According to SE2, the Power Plant would be built based on a projected economic viability that would most likely involve a portfolio of short, intermediate and long-term power supply contracts.

SE2 indicated that even if the introduction of power from the Power Plant was detrimental to BC Hydro's market position, not approving the IPL on the grounds that it was found unacceptable to have power from SE2's Power Plant compete with BC Hydro would be equivalent to erecting a trade barrier. According to SE2, this would contravene Article 606, Section 2 of the *North American Free Trade Agreement* (NAFTA). Further, SE2 noted that Dr. El-Ramly conceded that in a competitive market there would, by definition, be more than one generator, and that open access is necessary. This, according to SE2, implied that the elimination of monopoly power was necessary for a functioning open access transmission market. In SE2's view, the Board's mandate does not include the protection of one party in a competitive market from competition from another, or others, so as to enable regulator-favoured generators to build needed facilities.

5.3 System Reliability

5.3.1 Position of SE2

SE2 submitted that a shortage of electric power in any part of the Western Systems Coordinating Council (WSCC) region (to which Alberta and B.C. belong) can affect the reliability of the entire interconnected system and that the reliability of Canadian power systems in B.C. and Alberta is directly related to the reliability of the power system in the Pacific Northwest, and more broadly, the West. Power shortages have the effect of simultaneously reducing grid reliability and increasing power prices. SE2 stated that the B.C. Energy Plan recognizes that B.C. consumers have been significantly dependent on buying power from the U.S. to maintain adequate levels of system reliability. SE2 submitted that the increased supply of power that would be provided by its Power Plant would assist in maintaining a satisfactory supply of power in the region, which in turn would improve overall system reliability, mitigate price swings, and alleviate potential emergencies such as the west coast power crisis of 2000-2001 and other transmission failures.

5.3.2 Position of Intervenors

The Government Intervenors were of the view that the evidence did not show that the existing system is appreciably unreliable and submitted that the addition of power from SE2's Power Plant would have no significant impact on system reliability as BC Hydro expected to be able to serve its load in the foreseeable future.

5.4 Direct Benefits to Canadians

5.4.1 Position of SE2

In addition to the benefits that could accrue to Canadians as a result of gains from trade achieved under open access and improved system reliability, SE2 provided a list of quantifiable benefits that were expected to flow directly to Canadians if the IPL was approved and constructed. These were:

- approximately \$15 million to build the power line using largely Canadian services and suppliers;
- total of approximately \$60 million for Canadian manufactured and assembled turbines and major equipment for the Power Plant (under cross-examination, SE2 revised this estimate downward to \$40 to \$45 million);
- total of approximately \$6.3 million for interconnection infrastructure costs for the IPL and the natural gas pipeline;
- total of approximately \$7.7 million for use of RoW for the IPL;
- average annual payments of approximately \$201 million for natural gas purchases, royalties, and pipeline tolls (based on expected prices and recent published rates);
- average annual payments of approximately \$40 million for electricity transmission charges (based on recent published rates); and
- average annual expenditure of approximately \$237,000 for operating and maintenance costs for the IPL.

5.4.2 Position of Intervenor

Some intervenors disputed SE2's evidence of direct benefits from the IPL and Power Plant, suggesting that the direct economic benefits, as stated by SE2, were minimal, vague, exaggerated and inflated.

Intervenors argued that there was no certainty related to the proportion of construction costs that would go to Canada. For example, they noted that construction materials for the IPL, such as XLPE cable and the underground works, are not produced in Canada and would be sourced worldwide.

In addition, it was argued that the purchase of turbines by SE2 would not necessarily benefit Canada if existing turbines were purchased from a third party. Intervenors noted that there were no contracts in place for the turbines and that SE2 could choose to purchase turbine equipment from other sources. To remedy this, the Government Intervenors suggested that a condition requiring SE2 to purchase new turbines that were manufactured and assembled in Canada be attached to the Certificate, should the IPL be approved. In addition, intervenors expressed concern that there was uncertainty with respect to the actual cost of the turbines (originally given as \$60 million, but later revised to be between \$40 and \$45 million).

Intervenors went on to argue that it was incorrect to include natural gas payments that would be made by SE2 as a benefit, since if the gas was not contracted by SE2, it would be purchased by others, providing equal benefits to Canada. In addition, the alternative purchasers could include other natural gas-fired projects located south of the international border where they would not harm the Fraser Valley. Intervenors argued that if SE2 were to proceed with its facility, these potential projects could be displaced from the market.

Some intervenors expressed concern that the sales of natural gas to SE2 would cause natural gas prices to rise and increase reliance on other less clean sources of energy. Based on statements included in a document titled *Convergence Natural Gas and Electricity in Washington*, published by the Washington State Office of Trade and Economic Development, Mr. White, supported by the Abbotsford Chamber of Commerce, expressed concern that the effect of SE2 on natural gas and oil supplies would cause natural gas prices to rise with the result that local Canadian industry would be forced to use oil, and potentially coal, instead of natural gas.

With respect to electricity transmission (wheeling) charges, intervenors indicated that the amount would be less than the amount asserted by SE2. This would occur if the Power Plant did not operate continuously at 97 percent capacity for 30 years or if SE2 were successful with its complaint to the B.C. Utilities Commission relating to the postage-stamp transmission charges presently in place. Intervenors also noted that if the power were sold to BC Hydro and delivered at the Clayburn substation, there would be no transmission charges paid to BC Hydro.

In addition, intervenors stated that the payment to CPR should be considered compensation for the loss of a property interest and not a benefit created by the IPL.

Other concerns included views that SE2 would not be required to pay taxes in Canada, that no social benefit would accrue to Canada, that the 21 jobs created by the project would be in Sumas, and that from a business perspective the SE2 Power Plant could cause irrevocable damage to the economy of the Lower Fraser Valley. The view was also expressed that, unlike transmission and distribution infrastructure put in place in a cooperative manner by both Canadian and U.S. utilities in the past, the IPL would not provide mutual benefits to both Canada and the U.S. Instead, the benefit to Canada would be the net payments by SE2 for any materials and services purchased for the construction of the IPL and for the use of Canadian facilities.

Finally, it was argued that the Board should be mindful that many of the benefits cited by SE2 were presented as total dollar amounts that would accrue over the life of the IPL. The benefit amounts would actually be trivial when considered on a per capita basis over 30 years.

5.4.3 Response of SE2

With respect to the benefits associated with the purchase of turbines, SE2 stated that it would only purchase the turbines from Siemens-Westinghouse in Hamilton, Ontario and therefore the turbines would be manufactured and purchased in Canada with the benefits flowing to Canada.

Concerning the issue of natural gas payments, SE2 acknowledged that if it did not contract to consume the natural gas included in its direct benefits, some of the gas would be purchased by others. However, SE2 argued that some of the gas could remain shut-in longer than it might

otherwise. In addition, SE2 maintained that it is possible that the SE2 contract would encourage additional development of gas reserves that would otherwise have been developed later.

Regarding transmission charges, SE2 agreed that the benefits associated with these charges were based on present rates, but stated that there was no other available basis upon which to make the calculation. Further, SE2 noted that the transmission charges were calculated assuming that a take-or-pay firm transportation contract had been obtained and that transmission fees would be paid regardless of whether the Power Plant was running. However, SE2 agreed that if its power was purchased by BC Hydro, the point of delivery would be the Clayburn substation and that no transmission fee would be paid in that case.

5.5 Indirect Benefits

5.5.1 Position of SE2

In addition to the direct benefits described above, SE2 advanced the view that certain indirect benefits would result if the Power Plant were operating. Specifically, SE2 submitted that, on a regional level, the Power Plant would assist in reducing overall prices for electricity, assist with accelerating the retirement of older, less efficient natural gas plants, and contribute to a reduction of emissions.

SE2 noted that, due to a combination of reliability, cost effectiveness, competitiveness, and state-of-the-art technology, plants such as SE2 are substantially more efficient than older fossil fuel power plants that are currently serving loads. SE2 explained that when a new efficient low-cost plant such as SE2 becomes available, its electricity is dispatched in preference to higher-cost older plants, leading to a reduction in the overall cost of electricity.

Further, SE2 submitted that this would lead to a reduction in emissions since modern natural gas fired facilities tend to be substantially cleaner than older less efficient facilities. According to SE2, operation of the Power Plant, facilitated by the IPL, could reduce the environmental impacts that are currently being caused by the operation of older, less efficient, and dirtier power plants, such as the Burrard Thermal Power Plant (Burrard Plant).²⁶

With respect to the Burrard Plant, SE2 noted that its facility would be located immediately across the border and that a variety of options would be possible for B.C. to take advantage of the cleaner power offered by SE2. For example, BC Hydro could secure low risk long-term firm contracts with SE2. Alternatively, BC Hydro could negotiate two-year supply contracts during the repowering of the Burrard Plant. SE2 pointed out that the B.C. Energy Plan requires that energy for B.C. consumption be purchased from lowest cost providers, and that this would include imports from the U.S.

26 A 950 MW conventional natural gas-fired facility which provides back-up to B.C.'s hydroelectric system.

5.5.2 Position of Intervenorors

The Government Intervenorors disputed the notion that the Power Plant could act to reduce emissions. Referring to “The Tragedy of the Commons”²⁷, they submitted that the emissions from SE2 would be incrementally adding to the emissions of the region with the result that there would be no net social benefit from the project when consideration is given to who benefits from emitting and who bears the costs.

In addition, they submitted that the evidence presented regarding the Burrard Plant is vague and unclear. The Government Intervenorors noted that the Burrard Plant has generally been used on a sporadic, infrequent basis, essentially as back-up. While SE2’s evidence was focused on the relative efficiency of the two plants and indicated that there are potential options that SE2 could negotiate with respect to the Burrard Plant, on either a temporary or permanent stand-by basis, the Government Intervenorors maintained that these options were not specific.

Further, Dr. El-Ramly, on behalf of the Government Intervenorors, indicated that it was unlikely that B.C. would negotiate a long-term firm contract with SE2. He stated that the B.C. Energy Plan specified that by 2012 up to 50 percent of new demand be met by clean energy and that, in his view, the Power Plant would not qualify as a clean energy source. Further, he stated that it would not be logical to assume that BC Hydro, or the Province of B.C., would want to replace the Burrard Plant, the existing natural gas-fired plant, with the output of another natural gas-fired plant such as SE2, which is perceived to have a similar impact on the Lower Fraser Valley. Finally, he noted that, by importing power at a lower cost than it would have cost to operate the Burrard Plant, BC Hydro reduced the use of the Burrard Plant in 2001-2002, which also reduced emissions in the region.

The Straiton Community Association and others explained that the residents of the Fraser Valley and the GVRD have participated in the Air Care Program, which is the mandatory vehicle inspection system credited with significantly reducing Fraser Valley emissions, even with an increasing number of vehicles on the road each year. Under this program, Fraser Valley residents are required to keep their private vehicles maintained to strict emissions standards and, consequently, they collectively pay millions of dollars each year to ensure vehicle standards are met. These intervenors submitted that by allowing a single industrial point source of emissions such as SE2 to operate, the achievements of the Air Care Program could be neutralized and the efforts of people from Vancouver to Chilliwack to help reduce air pollution would be undermined. Randy Hawes, MLA, argued that SE2’s offset plan (also discussed in Section 6.2 of these Reasons) would simply trade one source of pollution for another and that this was not acceptable to the local government.

5.5.3 Response of SE2

SE2 submitted that the Government Intervenorors’ position, expressed by Dr. El-Ramly, that the current situation at the Burrard Plant would make it unlikely that BC Hydro would be interested in purchasing power from SE2, is not based on an evaluation of the relative costs, thermal efficiencies and environmental emissions from the Burrard Plant and the Power Plant. SE2 noted

27 Hardin, G., 1968, “The Tragedy of the Commons”, *Science*, v. 162, 1243-48.

that the relative emissions and heat rates for the Burrard Plant and the Power Plant would be significantly different as the Burrard Plant is old while SE2 would apply the latest technology. In addition, SE2 asserted that as its facility's operating costs would be considerably less than those of the Burrard Plant, it would be economically more efficient for B.C. to purchase power from SE2 than to operate the Burrard Plant.

5.6 Power Contracts, Financing and Financial Responsibility

5.6.1 Position of SE2

In its original 1999 application, SE2 stated that it intended to operate as a merchant plant. However, in its June 2001 Second Revised Application to EFSEC, SE2 offered to enter into long-term supply contracts for at least 60 percent of the Power Plant's capacity for a term of at least five years. Condition IV.W of the Site Certification Agreement (SCA) dated 23 August 2002, between SE2 and the State of Washington, ensures that at least 60 days prior to beginning construction of the Power Plant, SE2 would provide evidence to EFSEC that it had secured these contracts.

SE2 stated that it had not yet entered into any contract arrangements and that it would not likely do so until the regulatory process had been concluded. However, once that occurred, SE2 stated that it would give priority to regional businesses that want to enter into long-term power purchase agreements. It expected that there would be a good probability that industrial customers in B.C. would contract for power from SE2's Power Plant. SE2 expressed the view that its power would be in demand in B.C. and Alberta and that it expected to contract a significant portion of its power to those two provinces.

SE2 stated that arrangements for financing its project would not be made until such time as all required regulatory permits had been obtained. Further, SE2 suggested that financing would be easier if power contracts were in place. However, SE2 implied that the lack of power contracts should not be of concern since the effects of any failure by SE2 to compete successfully in the market would accrue to SE2 investors, rather than to ratepayers.

SE2 argued that even if, in the end, SE2 proved not to be successful in its marketing efforts, SE2 is entitled to have the opportunity to compete in the market.

5.6.2 Position of Intervenor

Several intervenors commented regarding the lack of power contracts. It was stated that, in reaction to credit-risk problems, illiquidity and volatility of the short-term market, the present electricity market trend is towards long-term contracts and away from short-term spot trading. However, some intervenors were of the view that BC Hydro was not likely to negotiate a long-term contract with SE2 and noted that it had stated publicly that it would not purchase SE2 output. Intervenor believed that BC Hydro had many other options for obtaining power.

Barry Penner, MLA, expressed concern over SE2's change in the characterization of the Power Plant from a merchant plant that would sell electricity to the highest bidder, to one offering to contract its power. He argued that the evidence revealed that thousands of MW of additional

generation already engineered and proposed in the Pacific Northwest were not proceeding because inadequate demand for power had made lenders unwilling to finance these projects. He also stated that SE2 admitted it may not be able to secure financing for the same reason. Mr. Penner argued that the lack of current financing casts doubt on the need for the Power Plant.

The Government Intervenors disputed SE2's view that it should be given a chance to operate its facility even if it eventually failed. They suggested that this view casts a doubt as to the need for the facility. Regardless of whether there are ratepayers or not, the Government Intervenors argued that it is important to determine a genuine need for the project because once approved, the construction of the IPL would be significantly disruptive to Canadians as, among other inconveniences, land would be expropriated and ground dug up. The Government Intervenors were of the view that a project such as SE2's should be required to meet some standard of justification before it is permitted to proceed and that a desire to enter a competitive market is not sufficient justification.

5.6.3 Response of SE2

With respect to concerns raised over its changed marketing plan, SE2 noted that between the time of its original application, when it had proposed that the Power Plant would be a merchant plant, and its revised application, much had changed in the competitive wholesale power market, largely due to the western power crisis of 2000-2001. The crisis had made it apparent that reliance on the spot market was extremely risky and, as a result, most utilities were returning to long-term contracts to ensure secure prices and reliability of supply.

Regarding concerns over the lack of financing in place, SE2 noted that energy projects such as the Power Plant and IPL require long lead times with respect to planning and financing, and indicated that a lack of financing at this stage was not uncommon. In addition, SE2 indicated that the long lead times imply that it would be some time before new plants, beyond those that are nearly finished, would be available to meet future power needs.

Views of the Board

In formulating its decision regarding the SE2 IPL, the Board has considered the evidence provided by the Applicant and intervenors relating to the market, the effects of SE2's Power Plant and IPL on the regional transmission system, direct and indirect benefits to Canadians, and evidence concerning contracts and financing of the facility. The Board's views on these issues are outlined below.

Market Demand

There was significant debate relating to market matters throughout the course of the proceeding.

The Board accepts that the most likely market region to be served by the Power Plant would be the Puget Sound basin, Tacoma, Seattle, Everett,

and the Lower Mainland area of B.C. In addition, the Board considers SE2's market forecast, which suggests a growing need for electricity in the region between 2003 and 2025, to be reasonable. However, the Board notes that the forecasts presented by SE2 focus primarily on growth in the U.S. part of the market region and that very little evidence specific to demand for electricity in Canada was provided by the Applicant. While the Board recognizes that there will likely be growth in the demand for electricity in the Canadian portion of SE2's market region, insufficient evidence was provided to indicate that the power from SE2's Power Plant would be needed to meet this future demand.

In addition, the Board notes that a number of other proposed power generation projects in the region were referred to in the evidence. In the Board's view, the Power Plant is one of many smaller independent power producers vying to enter the market and that the Power Plant would not have an appreciable effect on whether demand is met.

Thus, the Board does not find SE2's evidence concerning the need for the Power Plant to meet market demand, particularly with regard to Canadian demand, to be compelling.

Market Structure Impacts

The Board understands that the open access requirements of FERC Order 888 have fostered a more competitive electricity market, from which Canadian generators have benefited in recent years. However, it is the Board's understanding that the open access and reciprocity policies apply in circumstances in which a power producer requires transmission on an existing transmission facility in order to move its power. Where the transmission would require the construction of transmission facilities to connect with other downstream transmission facilities, the Board does not consider that these policies have the same degree of applicability. They do not require a regulator to approve significant transmission facilities to enable an interconnection. In the circumstances of this application, the Board must consider all aspects of the IPL and would attribute little weight to SE2's arguments regarding open access and reciprocity.

With respect to Dr. El-Ramly's scenarios offered on behalf of the Government Intervenors, the Board accepts that the operation of merchant plants may have some effect on the ability of BC Hydro to market surplus power. However, while the Board has a responsibility to protect competition in the market, it is not the Board's role to protect individual competitors. Individual competitors, such as BC Hydro, must adapt to changes in the market in which they operate, including increased competition offered by new entrants. Accordingly, the Board attributes little weight to this evidence.

With respect to other market structure impacts that could result from the Power Plant, the Board notes the following. First, the Board agrees that the close proximity of the SE2 Power Plant to the Lower Mainland BC Hydro grid could be advantageous to BC Hydro should the utility require imported power. In particular, the close proximity of the IPL to B.C.'s largest load centre could assist in minimizing the costs of upgrading transmission lines, and help avoid transmission losses and infrastructure costs.

Second, the Board is of the view that the addition of electric power from the Power Plant, or any other new facility in the region, could improve the reliability of the regional power system. Similarly, the addition of power from the Power Plant to the regional market could help to improve the overall functioning of a competitive market for electric power in the region.

Nonetheless, on the evidence provided, the Board is of the view that while these benefits could exist, there are no existing significant reliability or market issues in the SE2 market region to make the capture of these potential benefits imperative. Further, the Board believes that the effects of the addition of SE2's power to the region would be marginal, as the Power Plant would be a relatively small generator. With many other similar generators staged for market entry in the same time frame as SE2's entry is planned, the impact of a single generation facility on both reliability and the overall functioning of a competitive market would be minimal.

Finally, the Board notes that, while the location of the Power Plant is advantageous to SE2, regardless of whether its power is marketed to Canadian or U.S. consumers, intervenors expressed concerns about the potential for increased transmission constraints on the B.C.-U.S. intertie should SE2 export its power to U.S. customers. The Board accepts SE2's evidence that Canadian utilities such as BC Hydro, are working with RTO West to resolve existing and future constraint challenges on the B.C.-U.S. intertie.

Direct Benefits to Canadians

SE2 provided a list of direct benefits that could accrue to Canadians as a result of its project. In the Board's view, not all of these benefits should be given the weight suggested by SE2.

First, the Board does not accept that the royalty payments for natural gas constitute a benefit that can be attributed to the construction of the Power Plant. In the Board's view, if SE2 does not contract for the natural gas, it is likely that other consumers would be found to contract for the same quantity of gas. This is particularly true if SE2's market assessment is

accurate and the region would require an additional power plant, equivalent to the Power Plant's generating capacity, every two years to meet growing demand.

Second, the Board is of the view that the benefits associated with the payment of transmission charges to BC Hydro represent the maximum potential benefit from this source. While the Board appreciates that the calculations submitted by SE2 for transmission charges were based on the existing toll structure, it is possible that transmission charges could be reduced following the present BC Utilities Commission review. Further, if BC Hydro contracts for some or all of SE2's power, transmission charges could be as low as zero.

Third, the Board has some doubts as to the accuracy of SE2's calculated benefits amounts. For example, under cross-examination, it was revealed that the cost of the turbines SE2 intends to purchase could be as much as \$20 million less than the amount originally cited. In addition, not all components necessary for the project, such as the XLPE cable and underground works, would originate with Canadian manufacturers or suppliers. While this is not a requirement for approval, the Board is not confident that only benefits to Canadians were included in the calculations submitted by SE2, and therefore, the direct benefits to Canadians would not be as large as SE2 states in its evidence.

In the Board's view, the direct benefits to Canadians, as described by SE2, largely consist of compensation for goods and services that would be acquired for the construction and maintenance of the IPL or in the case of the CPR, compensation for use of the RoW. There are no significant value-added benefits, such as permanent jobs, that would accrue to Canadians as a direct result of the IPL. In general, the Board's view is that the direct benefits cited by SE2 either are not specific to SE2, as in the case of natural gas, or are uncertain. This is especially true as the time horizon for the IPL is 30 years.

Finally, it is the Board's view that attaching a condition requiring SE2 to purchase new turbines that were manufactured and assembled in Canada to the Certificate should the IPL be approved, would not be appropriate. The Board notes that, in any event, SE2 has committed to purchasing new turbines that would be manufactured and assembled in Canada.

Indirect Benefits

SE2 also suggested certain indirect benefits, primarily relating to the replacement of older, dirtier generation by the Power Plant, could accrue to Canadians.

The Board agrees that there are cases in which a new, efficient entrant to the market would displace older, less efficient generation. In this case, the Board agrees that the SE2 Power Plant, as a new state-of-the-art facility, could be less costly to operate and burn fuel more cleanly than some older facilities in the region, including the Burrard Plant. The Board notes that the location of the Power Plant would enhance this possibility. As such, SE2 power could displace the power from older, fossil fuel-fired power generation facilities in the region, reducing the aggregate cost of producing electricity and reducing aggregate emissions in the region. This in turn could moderate power price increases and other costs associated with higher levels of air pollution.

However, the Board is also aware that an older plant may be able to offer power at a lower price than a new plant, since most of its capital costs may already have been recovered. Further, in the specifics of this case, if SE2's market analysis proves to be accurate and demand for electricity in the region grows significantly over the years to 2025, it is possible that all existing plants would be required to meet growing demand. In this scenario, the Power Plant would provide incremental rather than replacement power, and would not assist in retirement of older plants.

Overall, the Board finds that the identified indirect benefits that would accrue to Canadians if the Power Plant were to go into operation are speculative, that a number of circumstances must occur before they would be realized, and that these circumstances are beyond the control of SE2.

Power Contracts, Financing and Financial Responsibility

Significant changes occurred in the electricity market between the time of SE2's original application and the time of its revised application. The Board is satisfied that the change in SE2's strategy from a merchant power plant to one that contracts at least part of its power for long-term periods is reasonable. In addition, SE2's position that it will not attempt to contract its power until after all regulatory hurdles have been cleared is reasonable. The Board accepts that SE2 would fulfill its commitment to EFSEC by providing evidence that contracts for at least 60 percent of its power for at least five years have been obtained.

The Board understands SE2's position that, as ratepayers would not bear the risk of failure, the market should be allowed to decide the success of the proposed project. However, constructing the IPL would have some effect on Canadians (for example, disturbance of the RoW and construction inconveniences) regardless of whether the Power Plant eventually becomes operational. Thus, even though the financial burden may be borne privately, externalities associated with the IPL may burden others. For this reason, the Board is of the view that the viability of the Power Plant should be reasonably assured.

The Board is aware that, as SE2 is a non-Canadian company, there may be no recourse available to Canadians should the Power Plant fail following construction of the IPL. Similarly, the Board would also want to be assured that the IPL would be properly decommissioned and abandoned at the end of its useful life. For these reasons, a condition requiring SE2 to file documentation with the Board demonstrating that sufficient funding is, and would continue to be, available for the abandonment and decommissioning of the IPL would be attached to any Certificate issued for the IPL (Condition B12 in Appendix II).

Chapter 6

Environmental Matters under the CEA and NEB Acts

In Hearing Order EH-1-2000, the potential environmental and socio-economic effects of the IPL, including those factors outlined in section 16 of the CEA Act, were identified by the Board as being relevant issues in reaching any conclusion regarding approval of the IPL. As set out in Chapter 1 of these Reasons, the Board, in response to a motion by SE2, asked parties whether it should also hear evidence related to the environmental effects in Canada of the Power Plant to be located in Sumas. Although the Board concluded that it does not have authority to consider these effects under the CEA Act, except where the effects of the Power Plant could act cumulatively with the effects of the IPL, the Board found that it does have the authority to consider these effects under the NEB Act and that there is no reason for the Board to refrain from exercising that authority.

Accordingly, the environmental effects of the IPL and the environmental effects in Canada of the Power Plant are addressed in this chapter. Environmental effects associated with the IPL, which were considered under the CEA Act, are discussed in Section 6.1 and the environmental effects in Canada of the Power Plant, which were considered under the NEB Act, are discussed in Sections 6.2 to 6.7.

6.1 Assessment of the IPL under the CEA Act

In order to satisfy the requirements of the CEA Act and its responsibilities pursuant to section 58.16 of the NEB Act relating to environmental matters, the Board prepared an Environmental Screening Report (ESR) on the IPL.

The ESR described the IPL, the environmental setting, the environmental assessment methodology, the potential environmental effects and proponent-proposed mitigative measures that would be applied, and assessed the likely significance of any adverse environmental effects. The ESR also considered submissions made during the course of the hearing, as well as comments from the Canadian Transportation Agency, Environment Canada, Health Canada and the Department of Fisheries and Oceans. In addition, the ESR included proposed Board conditions that would apply should a Certificate be issued.

The Board made the ESR available for public comment from 30 December 2003 to 16 January 2004. SE2 then had until 23 January 2004 to provide reply comments. A summary of the comments, SE2's reply and the views of the Board are included in Section 5.3 of the ESR.

Having considered the ESR and the public's comments thereon, in accordance with Hearing Order EH-1-2000 and the CEA Act, the Board is of the view that, subject to implementation of the proposed mitigation measures and the conditions listed in Appendix II, the IPL would not likely cause significant adverse environmental effects.

The Board would incorporate all the conditions described in the environmental screening into any Certificate issued to SE2 for the IPL (see Appendix II of these Reasons). It should be noted that the Board would also carry out its own inspections and audits in accordance with the relevant legislation and conditions of approval to ensure further protection of the public and the environment, should the IPL be approved and constructed.

6.2 Air-Related Issues

The principal concerns raised by intervenors in respect of the Power Plant involved air quality. The first area of concern, discussed in Section 6.2.1, focused on the emissions that would result from the Power Plant, how these were identified, how the dispersion of the emissions in the Lower Fraser Valley was modelled, and how changes to the air quality were evaluated. Section 6.2.2 addresses the evaluation of potential human health effects that could result from any changes in air quality. Section 6.2.3 addresses potential effects of emissions and air quality on agriculture, soils, livestock, and visibility.

6.2.1 Emissions and Air Quality

6.2.1.1 Position of SE2

Emissions

SE2 submitted that the natural gas-fueled Power Plant would be a source of pollutants that are governed by either the Canadian National Air Quality Objectives or the Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards for Particulate Matter (PM) and Ozone (collectively the Canadian Air Quality Objectives and Standards). These pollutants would include nitrogen oxides (NO_x), carbon monoxide (CO), sulphur dioxide (SO₂), and particulate matter 10 microns (PM10) or less in diameter and 2.5 microns (PM2.5) or less in diameter, collectively referred to as PM. The NO_x would consist of nitrogen dioxide (NO₂), nitrous oxide (N₂O) and nitric oxide (NO). SE2 indicated that ozone, although not directly emitted by the Power Plant, may be formed through photochemical reactions between NO_x and volatile organic compounds (VOCs). SE2 also indicated that some of the SO₂ from the facility would be expected to convert and hydrolyze to sulphuric acid mist (H₂SO₄).

Small amounts of other pollutants not governed by the Canadian Air Quality Objectives and Standards would also be emitted. In SE2's submission, these pollutants would consist of polyaromatic hydrocarbons, and BTEX compounds (*i.e.*, benzene, toluene, ethylbenzene and xylenes). Excess ammonia from the mitigation measures to reduce NO_x levels and small amounts of VOCs, such as unburned natural gas, would also be emitted.

In its revised application, SE2 predicted the potential emissions from the Power Plant based on information from the compressor turbine manufacturer, gas turbine emission studies sponsored by the U.S. Environmental Protection Agency (USEPA), and the composition of the natural gas that would be used to fuel the turbines. The pollutants and the corresponding levels that were jointly permitted by the Washington State EFSEC and the USEPA are presented in Table 6.2.1.

Table 6.2.1
Potential and Permitted Power Plant Emissions²⁸

Pollutant	Potential Emissions Predicted by SE2 ²⁹ tons/y (kg/y)	Emissions Permitted by EFSEC and USEPA ^{30,31} tons/y (kg/y)
NO _x	144.5 (131 000)	144 (130 600)
CO	88 (79 830)	199.8 (181 300)
VOC	153 (138 800)	153.4 (139 200)
PM10 microns or less (combined filterable and condensable)	209 (189 600)	208.4 (189 100)
SO ₂	69 (62 600)	69 (62 600)
H ₂ SO ₄	14.3 (12 970)	14.2 (12 880)
Ammonia	139 (126 100)	139.4 (126 460)

SE2 submitted that, with the proposed design and mitigation measures, actual emissions would be below both the potential and the EFSEC and the USEPA permitted levels. Pursuant to the EFSEC PSD Permit, SE2 would be required to monitor, report on, and take any necessary corrective action to ensure emissions were below the permitted levels. SE2 would also be required to measure the emission rates of NO_x, SO₂, H₂SO₄, CO, VOCs and PM10 during performance tests to be conducted within 180 days after initial start-up of each combustion turbine. Continuous monitoring would be required for emissions of CO, NO_x, O₂, and for exhaust gas flow rate or velocity. Source testing would be conducted annually for the first three years following initial start-up. Testing thereafter would be once every three years if the initial performance and subsequent tests were below the EFSEC and USEPA permit limits. Failure of any source test to be below the permit limits would start the three-year annual test cycle over.

Modelling

To predict the effects of emissions from the Power Plant on ground level concentrations of pollutants, SE2 conducted modelling for three different operating scenarios. These included a partial load scenario, base load scenario and maximum power output. SE2 characterized the partial load scenario as the combustion turbines operating at minimum efficiency. The base load scenario was characterized by SE2 as the most efficient operation of the combustion turbines. At maximum power output, SE2 noted that there would be additional gas used by the boilers downstream of the combustion turbines and that this would generally be when maximum

28 Values set out in the Final Approval of the Prevention of Significant Deterioration and Notice of Construction No. EFSEC/2001-02 (PSD).

29 kg/y calculated by multiplying tons x 907.2.

30 These values are arrived at by multiplying by two the tons/y limits provided in the source noted in footnote 28 for each turbine to adjust for the two turbines proposed for the Power Plant.

31 kg/y calculated by multiplying tons x 907.2.

emissions would occur. SE2 also conducted modelling for start-up conditions. SE2 stated that its air quality modelling evaluated more than 4000 locations in a region extending from approximately Olympia, Washington to Whistler Mountain, B.C. and from the Pacific Ocean to east of the Coast Mountains. SE2 also modelled concentrations at four B.C. cities: Abbotsford, Chilliwack, Hope, and Surrey. SE2 submitted that its dispersion modelling protocol was reviewed and approved by the B.C. MWLAP.

ISCST3

In conducting its modelling, SE2 used the USEPA Industrial Source Complex-ISCST3 model. SE2 submitted that ISCST3 identifies the range of concentrations that would be expected from an industrial facility. It was noted by SE2 that ISCST3 is not an exact replication of what happens in the atmosphere. The model assumes a constant wind direction between the source and the receptor. It also assumes that the trajectory of the plume of emissions, once it has left the stack, is not altered between the source and the receptor by either terrain or changes in wind direction. SE2 submitted that this is usually the worst-case assumption for impacts in complex terrain and that the ISCST3 is used to identify the highest concentration in complex terrain. SE2 further submitted that ISCST3 has been used for more than 15 years and is the model of choice throughout the U.S. and many parts of the world. The input parameters used by SE2 included five-year meteorological data, which had been collected at the monitoring station in Abbotsford. In applying the ISCST3, SE2 noted that it had performed several simulations and used locations based on a 1 km grid and a denser 250 metre grid.

CALPUFF

SE2 also conducted a more detailed evaluation using the CALPUFF model developed by Earth Tech Inc. and adopted by the USEPA. SE2 noted that CALPUFF is a suite of numerical models used to determine the impact of emissions. SE2 submitted that the CALPUFF analysis provided a realistic treatment of Pacific Northwest regional meteorology to assess secondary aerosol formation, nitrogen deposition and regional haze. The CALPUFF assessment was a collaborative effort by SE2 together with the University of Washington and the Washington Department of Ecology. SE2 submitted that an important component of this modelling was the incorporation of a one-year meteorological data set based on numerical simulations of Pacific Northwest weather with the Penn State and National Center of Atmospheric Research Mesoscale Model. SE2 noted that, instead of long continuous plumes assumed by the ISCST3, the CALPUFF model assumes puffs are released and that the puffs move independently of one another based on a three dimensional wind that varies in time and space. SE2 submitted that the CALPUFF modelling was not intended to resolve impacts in complex terrain. SE2 further submitted that the CALPUFF modelling was undertaken at the request of MWLAP to look at local visibility impacts and local haze impacts. SE2 noted that locations based on a 4 km grid had been used in the CALPUFF modelling.

Predicted Concentration and Comparison with Air Quality Objectives and Standards

In evaluating compliance with the air quality objectives for the Province of B.C., the GVRD and the Canadian Air Quality Objectives and Standards, SE2 submitted that it had used the most stringent of these requirements.

In determining the background air quality, SE2 indicated that it used monitoring data that had been collected from the Lower Fraser Valley from 1996 to 1999 by the GVRD. SE2 stated that it averaged the maximum short-term concentrations observed each year. SE2 submitted that these levels might only occur once per year, and may occur under different meteorological conditions from those conditions under which maximum concentrations of pollutants from the Power Plant were predicted.

The maximum ISCST3 and CALPUFF modelled contributions during the operation of the Power Plant are presented in Table 6.2.2. These contributions are added to the background levels and compared with the B.C. and Canadian Air Quality Objectives and Standards in the table.

Table 6.2.2
Maximum Ground Level Concentrations Modelled for Operation

Pollutant	Averaging Period	Maximum Concentrations in Canada ($\mu\text{g}/\text{m}^3$)		Background ($\mu\text{g}/\text{m}^3$)	Background and Maximum ³²	Air Quality Objectives and Standards ($\mu\text{g}/\text{m}^3$)
		ISCST3	CALPUFF			
SO ₂	1 hour	5.13	10.87	35	46	450 ³³
	24 hour	1.22	1.49	9	10	150
	Annual	0.13	0.08	*	*	30
NO ₂	1 hour	10.73	24.67	112	137	400 ³⁴
	24 hour	2.54	3.46	59	62	200
	Annual	0.26	0.20	*	*	60 ³⁵
CO	1 hour	6.5	*	7042	7049	14300 ³⁶
	8 hour	3.32	*	3252	3255	5500
PM2.5	24 hour	3.67	6.01	18	24	30 ³⁷

* Not provided by Applicant

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- 32 Calculated by adding the background to the maximum ground level concentration modelled by either ISCST3 or CALPUFF.
- 33 *Canadian Environmental Quality Guidelines*, Canadian Council of Ministers of the Environment, 1999 (definition from 1989 Ambient Air Quality Objectives): The maximum desirable level is the long-term goal for air quality and provides a basis for an antidegradation policy for unpolluted parts of the country, and for continuing development of pollution control technology.
- 34 *Canadian Environmental Quality Guidelines*, Canadian Council of Ministers of the Environment, 1999 (definition from 1989 Ambient Air Quality Objectives): The maximum acceptable level is intended to provide adequate protection against effects on soil, water, vegetation, materials, animals, visibility, personal comfort, and well-being.
- 35 *Supra*, note 34.
- 36 British Columbia Air Quality Objective, Level A: Level A is the most stringent requirement and provides for long-term environmental protection. Level A is required for new and proposed discharges and, within the limits of the best available technology, for existing discharges by planned staged improvements for those operations.
- 37 *Canada Wide Standard for Particulate Matter (PM) and Ozone*, Canadian Council of Ministers of the Environment 2000: This is the numerical target for particulate matter by 2010. Achievement is to be based on the 98th percentile ambient measurement annually, averaged over three consecutive years.

The maximum ISCST3 and CALPUFF modelled contributions during start-up are added to the background levels and compared with the B.C. and Canadian Air Quality Objectives and Standards in Table 6.2.3.

Table 6.2.3
Maximum Ground Level Concentrations Modelled for Start-up

Pollutant	Averaging Period	Maximum Concentrations in Canada ($\mu\text{g}/\text{m}^3$)		Background ($\mu\text{g}/\text{m}^3$)	Background and Maximum ($\mu\text{g}/\text{m}^3$)	Air Quality Objectives and Standards ($\mu\text{g}/\text{m}^3$)
		ISCST3	CALPUFF			
SO ₂	1 hour	46.6	27.22	35	82	450 ³⁸
	24 hour	1.24	1.02	9	10	150
NO ₂	1 hour	204.2	143.92	112	316	400 ³⁹
	24 hour	2.37	2.41	59	61	200
CO	1 hour	1725.4	*	7042	8767	14300 ⁴⁰
	8 hour	251.77	*	3252	3504	5500
PM _{2.5}	24 hour	3.69	4.36	18	22	30 ⁴¹
VOC	1 hour	275.24	*	*	*	*
	24 hour	3.37	*	*	*	*

* Not provided by Applicant or currently no standard

In SE2's submission, start-up emissions would constitute only a few percent of the overall yearly emissions for the Power Plant. SE2 indicated that while NO_x and CO emissions would be higher during start-up than during normal operations, this would not mean that total emissions would be higher, as a start-up would only last a few hours and would follow a period in which the Power Plant would have had no emissions. SE2 further submitted that emissions during the start-up period would not be near the level that might threaten the short-term NO_x objectives in Canada, or create a ground level ozone problem. SE2 stated that start-up emissions were used in modelling the pollutants not governed by the Canadian Air Quality Objective and Standards, as these pollutants are related to fuel consumption, and that the scenario with the highest fuel consumption would be a cold start. The process that was used by SE2 to evaluate the emissions of these pollutants is addressed further in Section 6.2.2.

Based on the results of its modelling, SE2 submitted that maximum ground level concentrations of pollutants with the Power Plant operating would be below the most stringent of the B.C. and Canadian Air Quality Objectives and Standards under all operating conditions.

38 *Supra*, note 33.

39 *Supra*, note 34.

40 *Supra*, note 36.

41 *Supra*, note 37.

Location of Maximums

With respect to the location of the maximum ground level concentrations of pollutants from the Power Plant, SE2 submitted that modelling predicted that these would generally occur on the south face of Sumas Mountain.

Ozone

In respect of ozone, SE2 submitted that Power Plant emissions of ozone precursors, NO_x and VOCs, would be a very small addition to the emissions from existing Canadian and U.S. sources in the Lower Fraser Valley, and hence, unlikely to have any noticeable effect on ozone formation. SE2 further submitted that staff from MWLAP, GVRD and Environment Canada collaborated on a technical assessment of the air quality impacts of the Power Plant using the Urban Airshed Model (UAM) to examine changes to ground level concentrations of NO_x and VOCs. The results of the UAM modelling indicated that the ozone concentration close to the Power Plant would be up to five parts per billion (ppb) higher, but more likely less than 2 ppb higher, under episodic situations. The UAM results further indicated that beyond 5 km from the Power Plant, the increase in ozone concentration would drop off rapidly to values less than 0.5 ppb higher. SE2 submitted that the Power Plant emissions would not increase the frequency of current exceedances of the Canada-Wide Standard for ozone. SE2 further submitted that ozone concentrations have been low to moderate in Abbotsford since 1996 and that monitoring results for ozone were below the maximum acceptable 1-hour Canadian National Air Quality Objective of 160 µg/ m³ 99 percent of the time. SE2 stated that the 8-hour ozone concentrations have been only 69 to 80 percent of the 65 µg/ m³ Canada-Wide Standard for ozone since 1998.

Greenhouse Gases

SE2 stated that the Power Plant could increase the amount of CO₂ equivalent emissions generated in Washington State by up to 2.4 million tons each year. SE2 submitted that reducing, avoiding, or capturing and storing Greenhouse Gas (GHG) emissions at another location would offset GHG emissions. SE2 has committed to EFSEC to fund approximately \$8 million (US) for GHG offset and mitigation projects, and specifically CO₂ mitigation. SE2 indicated that while there would be no local adverse impacts from GHG emissions, SE2 would, to the extent feasible, encourage EFSEC, the Climate Trust⁴², or a similar organization to give preference to mitigation projects that are in geographical proximity to the Power Plant on both sides of the Canada/U.S. border.

Construction Emissions

During construction, SE2 stated that there would be emissions from diesel-fueled vehicles and construction equipment, and dust generated by earthmoving as well as windblown dust. Dust from access roads would be controlled by paving the access roads or applying gravel and watering as necessary. SE2 submitted that as the site is flat, little grading would be required. SE2 further submitted that impacts would cease once construction of the Power Plant was completed

⁴² The Climate Trust is a non-profit organization, originally formed in 1997 as the Oregon Climate Trust. Its mission is to promote climate change solutions by providing greenhouse gas offset projects and advancing offset policy.

and that, given the distance from the border, construction-related air pollution would have minimal, if any, impact on Canadian receptors.

Mitigation

With respect to mitigation, SE2 indicated that it would meet all conditions imposed by EFSEC and the USEPA. SE2 submitted that using natural gas with defined sulphur content, the implementation of best available control technologies (BACT) and minimizing the number of start-up and shut-down cycles would minimize the environmental impact of the facility. BACT for NO_x control would consist of a combination of standard, dry, low- NO_x burners with selective catalytic reduction control technology. Good combustion practice, using only natural gas, would constitute BACT for control of VOCs, PM10, SO₂, and organic air pollutants. BACT for CO control would be catalytic oxidation. The BACT for ammonia would consist of selective catalytic reduction with a five parts per million dry volume (ppmdv) ammonia slip limit. SE2 submitted that by implementing these measures, the Power Plant emissions would be less than those from facilities approved by the Province of B.C., including the Burrard Plant, which is operating in the same airshed and is permitted by the GVRD.

SE2 has also committed to offset 100 percent of the NO_x and PM emissions from the Power Plant by reducing actual emissions in the Fraser Valley airshed. The offset agreement between Washington State and SE2 would require the offsets to be located in the Fraser Valley airshed. If SE2 is unable to privately negotiate and implement acceptable offset projects, it would be required, in the alternative, to create a \$1.5 million (US) fund to be used for improvement of air quality in the Fraser Valley airshed. The fund would be administered jointly by the Washington Department of Ecology and MWLAP or other organizations approved by EFSEC. SE2 stated that there had been no cooperation with respect to pursuing possible offsets that it had identified with either the Fraser River Debris Trap or a boiler retrofit under a GVRD program. SE2 indicated that emissions from the Burrard Plant could be offset by the Power Plant. SE2 committed to file with the Board the results of emissions monitoring, mitigation proposals including the offset plan, and all other reporting that would be required by the SCA between SE2 and the State of Washington and the PSD issued by EFSEC and the USEPA.

6.2.1.2 Position of Intervenorors

No participating intervenors supported either the IPL or the Power Plant. Generally, concerns related to the appropriateness of constructing a facility that would produce tons of emissions in proximity to a major residential area. Adding the Power Plant to the airshed was characterized as adding the equivalent NO_x emissions produced by 7400 light duty vehicles and the PM10 emissions produced by 336,000 light duty vehicles. Intervenorors also questioned the appropriateness of locating the Power Plant in one of the three airsheds in Canada that had been identified by Environment Canada during the 1980s as requiring the implementation of remedial actions due to ozone levels exceeding the maximum acceptable level.⁴³

The Government Intervenorors stated that emissions from the Power Plant would be contrary to the GVRD and FVRD goals of improving air quality. It was submitted that considering Canada as a

⁴³ The Canadian National Ambient Air Quality Objective maximum acceptable level is intended to provide adequate protection against effects on soil, water, vegetation, materials, animals, visibility, personal comfort, and well-being.

garbage dump for something from another country is not in the Canadian public interest. The GVRD stated that under the B.C. *Waste Management Act*, it has the powers delegated from the Province to manage air contaminants in the region. The objective of the GVRD's Air Quality Management Plan (1994) is to reduce the total emissions of pollutants. The GVRD indicated that it had opposed the application for the Power Plant on several occasions and submitted that, based on 1998 emissions data, the emission levels of NO_x, CO, SO_x, VOCs and PM10 would place the Power Plant within the top 10 point sources in the region.

Intervenors submitted that, in order to address the ambient air quality issues in the Lower Fraser Valley, the GVRD, the FVRD, and others in the region have invested considerable resources in improving the ambient air quality and that efforts since 1985 have achieved an approximately 40 percent reduction in total emissions to the airshed. Intervenors submitted that the addition of emissions from the Power Plant would add to the load on the airshed and be counter-productive to efforts to further improve the air quality (see also Section 5.5.2). The Government Intervenors gave the example where the implementation of Tier 2⁴⁴ standards for vehicle emissions would reduce peak hourly ozone concentrations in the Lower Fraser Valley by about 4 ppb, whereas start-up and operation of the Power Plant would increase ozone concentrations by 3 and 4 ppb respectively. The Government Intervenors submitted that efforts to date to improve the ambient air quality have involved easily implemented and economical programs and that, in order to achieve further improvements in air quality, more expensive or aggressive programs may need to be implemented.

Intervenors questioned SE2 as to how the Power Plant would satisfy the principles set out in the Canada-Wide Standard for Particulate Matter (PM) and Ozone for implementation of continuous improvements, pollution prevention, and keeping clean areas clean. SE2 was further questioned on the appropriateness of polluting "up to a limit".

Several intervenors questioned whether the results of the dispersion modelling had been diluted by the size of the area modelled. Additional concerns were raised as to whether the use of a 4 km grid for the CALPUFF modelling would allow for the identification of the maximum ground level concentrations of pollutants and the location where these would occur. The Government Intervenors further examined SE2 on the use of a 12 km grid in simulating meteorological data for use in the CALPUFF model.

In examining the CALPUFF modelling, the Government Intervenors observed that SE2 had used only one year of data. It was submitted that the USEPA recommends using five years of meteorological data for all models to assure that the least favorable dispersion during the five-year period would be modelled. The Government Intervenors also questioned the approach to dispersion modelling in complex terrain using the ISCST3 and CALPUFF models and uncertainties in the treatment of mixing heights using the ISCST3 model.

Intervenors questioned whether the ISCST3 model adequately addressed calm conditions and observed that the meteorological data for the Abbotsford Airport indicated that calm conditions existed approximately 26 percent of the time over the five-year period. The Government Intervenors also raised concerns with the recirculation of air pollutants, concentrations further up the Lower Fraser Valley, and the effects of inversions on ground level concentrations.

44 USEPA motor vehicle emissions standard.

The Government Intervenor submitted that when higher emissions and higher ground level concentrations during start-ups and shut-downs are included in dispersion modelling, the annual average concentrations of NO_x and CO might be substantially higher than predicted in the presented dispersion modelling. The Government Intervenor further submitted that if start-ups were to occur in the daytime during smog events, these could lead to a significant increase in the predicted maximum 1-hour ozone concentrations.

With regard to mitigation measures proposed for the Power Plant, the GVRD noted that it had advised EFSEC that it opposed the proposed mitigation measure for NO_x as it would introduce ammonia into the atmosphere. The GVRD further noted that it had requested EFSEC to consider curtailment of the operation of the Power Plant during periods of adverse air quality. The Government Intervenor submitted that the Burrard Plant is required to cut emissions during special ozone periods.

Intervenor also challenged the adequacy of the \$1.5 million (US) offered to be paid in lieu of the NO_x and PM offset program and commented on the absence of any agreements being in place for offsets. In addition, intervenors raised concerns that, as offsets could not be obtained in the Sumas area, discharges at the stack would still result in degradation of local air quality. Intervenor suggested that any attempts at implementing an offset program may be unworkable since no large-scale emitter of PM10 and NO_x exists at Sumas or in the Lower Fraser Valley to give a one-to-one reduction.

In looking at pollution trends, the Government Intervenor challenged SE2's position that it expected annual decreases of NO_x emissions in the Lower Fraser Valley. The Government Intervenor based their challenge on the GVRD forecast of emission trends and on concerns that there had been an inadequate accounting of emissions from marine sources.

In a Letter of Comment, Environment Canada submitted that its finding that during operations the Power Plant "emissions would not increase the frequency of current exceedances of the Canadian ambient air quality objectives" would also apply to start-up emissions. Environment Canada also indicated that although the emissions from the Power Plant would "result in a small increase in ozone episode intensity", there would be "no increase in ozone episode duration for commonplace ozone episodes".

6.2.1.3 Response of SE2

In responding to concerns raised by intervenors, SE2 submitted that the air quality in the eastern part of the Lower Fraser Valley potentially affected by the Power Plant is in compliance with the Canada-Wide Standards for Particulate Matter (PM) and Ozone and that the air quality is good.

SE2 indicated that the Lower Fraser Valley is not a closed airshed and that permits for new emission sources are still being issued by both the GVRD and the Province of B.C. SE2 submitted that no Canadian air quality agency has implemented a "no new emissions" policy in the Lower Fraser Valley. SE2 further submitted that the GVRD Air Quality Management Plan contains no prohibition on industrial or other activities which emit air pollutants. Rather, SE2 submitted that the Air Quality Management Plan specifically contemplates new facilities.

In respect of the principles of continuous improvement and “keeping-clean-areas-clean” programs, SE2 submitted that programs to implement these are not regulations. SE2 further submitted that these provisions specifically contemplate the addition of new facilities in those areas in Canada in compliance with the Canada-Wide Standard for Particulate Matter (PM) and Ozone, such as Abbotsford, Chilliwack and the Lower Fraser Valley.

SE2 raised concerns with whether a double standard was being applied by the Government Intervenor with respect to the dispersion modelling that it had undertaken. SE2 observed that the modelling protocol was approved by MWLAP. SE2 submitted that the Province of B.C. directly, and the GVRD and Environment Canada indirectly by approving the Joint Technical Report⁴⁵, approved the modelling. In respect of the grid spacing used for the meteorological simulations for the CALPUFF model, SE2 submitted that increasing the resolution from 12 km to 4 km would not significantly improve the characterization of the winds at Abbotsford, especially during the light wind and stable conditions that accompanied most of the higher predicted concentrations.

With respect to uncertainties in the modelling, SE2 submitted that B.C. and the GVRD rely on monitored background levels. SE2 further submitted that the air quality monitoring network captures the maximum levels of regulated pollutants where people work and live. SE2 submitted that monitoring data in Abbotsford and Chilliwack exhibit a bias to higher levels due to local emission sources such as the effects of on-road emissions, dust and commercial/industrial emission sources. Such emission sources would be much lower or non-existent in elevated areas such as Sumas Mountain. SE2 further submitted that the modelling considered maximum predicted levels and these provide a conservative basis for assessing the impacts and fully address the types of uncertainty raised by the Government Intervenor.

SE2 acknowledged that calms (those periods with wind speeds below one metre per second) are not simulated by the ISCST3 and that these periods are treated as missing information. SE2 characterized calms as winds below the threshold of the anemometer to measure and submitted that it is assumed that there are enough other light wind conditions that are above the threshold of the anemometer to represent these situations. SE2 submitted that the calms occur sporadically throughout the year and not during one period. SE2 acknowledged that in the scenario proposed by the Government Intervenor where winds, measured as a calm, moved towards Sumas Mountain for an extended period of time, there could be a slight possibility of an increased concentration of pollutants that would not have been modelled by ISCST3. SE2 noted that CALPUFF would be the better model and would provide a more realistic approach during prolonged calm periods.

SE2 stated that new commercial industrial operations in the region should incorporate the most up-to-date technology and that this technology must, as a minimum, be equivalent to the most stringent standards of the Canadian and B.C. governments. SE2 submitted that the emissions technology proposed for the Power Plant would achieve emissions far lower than required by Canadian or B.C. best-available control standards or guidelines. SE2 further submitted that no Canadian air quality agency requires new emission sources to be offset.

45 Sumas Energy 2 Generation Facility Air Quality Issue Summary, September 11, 2000 prepared by technical staff from B.C. Ministry of Environment, Lands and Parks, Environment Canada – Pacific and Yukon Region and the Greater Vancouver Regional District.

6.2.2 Effects on Human Health

6.2.2.1 Position of SE2

SE2 conducted a series of risk assessments to evaluate the potential human health risks associated with the worst case emissions modelled for the Power Plant, using both ISCST3 and CALPUFF, at sites within the Lower Fraser Valley. The risk assessments compared the modelled ground level concentrations of NO_x, CO, SO₂, PM_{2.5} and ozone against the B.C. and Canadian Air Quality Objectives and Standards. For the risk assessment, SE2 compared NO₂ levels with the World Health Organization (2000) Air Quality Guidelines of 200 micrograms per cubic metre (µg/m³). In evaluating these pollutants, SE2 submitted that it assessed both the pollutants from the Power Plant and the cumulative health risks for the pollutants from the Power Plant together with background levels. An “absolute worst case” assessment was also undertaken in response to the Government Intervenor. In this further assessment, the maximum modelled concentrations from the Power Plant were added to the maximum recorded concentrations of the same pollutants from existing sources in the Lower Fraser Valley. For those pollutants not addressed by B.C. or the Canadian Air Quality Objectives and Standards, SE2 undertook a comparison with objectives set out by other jurisdictions. These included objectives established by the Ontario Ministry of the Environment and Energy (1997), the California Office of Environmental Health and Hazard Assessment (2000), and the U.S. Agency for Toxic Substances and Disease Registry (2001).

SE2 stated that a comparison of predicted pollutants with the objectives, expressed as reference concentrations in SE2’s assessments of human health risk, was undertaken by calculating a Concentration Ratio, which represented the ratio between the maximum predicted ground level concentration and the objective. SE2 considered human health risks acceptable if the Concentration Ratios were less than 1.0 and unacceptable if greater than 10. If the Concentration Ratio was between 1.0 and 10, professional judgment was exercised to determine if the risks were actual or the result of assumptions or considerations in the assessment. SE2 evaluated scenarios that included acute (short-term) and chronic (long-term) exposures arising from normal operations and start-up scenarios. SE2 submitted that, in general, air modelling of the emissions indicated ground level concentrations of pollutants in the Lower Fraser Valley were below the objectives (*i.e.*, the Concentration Ratios were less than 1.0) and, therefore, within acceptable human health guidelines.

Only in a few cases were the Concentration Ratios calculated by SE2 greater than 1.0. In these cases, SE2 submitted that the inherent conservatism of the assessment in using factors, such as the maximum predicted concentrations of pollutants predicted for the Power Plant, rendered the risks to be minimal. This was the case for NO₂ where SE2 noted that it had picked an objective that was half of the most stringent 1-hour objective in either B.C. or Canada. SE2 submitted that in none of the scenarios examined were Concentration Ratios greater than 10. Based on the risk assessments, SE2 submitted that health risks would be minimal for both project-specific emissions and cumulative effects.

SE2 further submitted that its evaluation of PM over-predicted risks, as it assumed all of the PM would be PM_{2.5}, the size of greatest concern according to the Canada-Wide Standards. Further, SE2 submitted that its evaluation of health effects used the maximum concentrations that were

predicted and that these would not realistically be expected to coincide with either the worst background levels, or to be present on an ongoing basis.

SE2 evaluated the emissions from the Power Plant based on reports on human health effects found in the scientific literature. Based on the review, the incremental increases in the concentrations of NO₂, ozone, and PM_{2.5} did not, in SE2's submission, reach concentrations where the studies have found acute or chronic health effects and would not result in either measurable or significant acute or chronic health effects. SE2 submitted that the levels of SO₂, even under the worst case scenarios in the Lower Fraser Valley, would be below the levels needed to aggravate health even in the case of the most susceptible individuals with asthma or airway hyper-responsiveness.

SE2 submitted that the three different health risk assessments undertaken consistently demonstrated an absence of any significant health risk from the maximum Power Plant emissions alone or in combination with maximum background levels under all operating scenarios. SE2 further submitted that the Power Plant emissions would be so low as to be essentially insignificant from a health effects perspective.

6.2.2.2 Position of Intervenor

Intervenor raised concerns that the assessment of the potential health risks undertaken by SE2 was dependent on the results of the dispersion modelling and that any problems with the modelling would impact the assessment. Intervenor also expressed discomfort with SE2 discounting situations, such as where the Concentration Ratios were above 1.0.

Intervenor submitted that air quality in the Fraser Valley is already stressed to the limit and that the incidents of respiratory problems and other health impacts due to air quality problems are a reality and are increasing.

The Government Intervenor submitted that health effects may be experienced at any exposure to ozone and PM_{2.5}, since there is no threshold for these pollutants.⁴⁶ The Government Intervenor further submitted that the health standards used in the risk assessment are assumed to be protective under all circumstances and do not address the possibility that future studies may reveal unsuspected correlations between air pollutants and human health effects. Based on this, the Government Intervenor stated that, although a current assessment may indicate the lack of health effects, there can be no assurance that future studies will not indicate a health concern. The Government Intervenor submitted that with projected population growth in the Lower Fraser Valley, additional sources of emissions would be added to the airshed and there would be associated impacts on air quality that would lead to increased incidences of respiratory illnesses among the population of the Lower Fraser Valley.

Concerns were raised with respect to how the increased emissions would affect those with asthma and the role of air pollution in increasing the incidence of asthma. SE2 was questioned about how one would know that increases in asthma rates are not caused by air pollution. SE2 was also questioned on whether there had been any studies on bronchiectasis, the possibility for

⁴⁶ *The Canada-Wide Standard for Particulate Matter (PM) and Ozone* stated that there is no apparent lower threshold for the effects of these two pollutants on human health.

airborne pollutants to cause blood vessels to constrict, triggering heart attacks in the elderly, and the effects of pollution on the human immune system.

6.2.2.3 Response of SE2

SE2's witness, Dr. Renzi, submitted that asthma has increased over the last 20 years in all western society, not just in the Lower Fraser Valley. Dr. Renzi submitted that there are a lot of current hypotheses regarding the increased asthma rate, including the hygiene hypothesis. The basis for this hypothesis is that society is too clean. Dr. Renzi noted that infection with bacteria stimulates the immune system and noted, for example, there is less asthma on farms where there is exposure to endotoxins. Another hypothesis noted by Dr. Renzi is the elimination of bacteria, which stimulate the immune system, through the overuse of antibiotics. Dr. Renzi submitted that, in papers on the development of asthma in infants, the top two causes identified are secondhand tobacco smoke and upper respiratory tract infections. With respect to pollution, it was noted that comparisons of pollution levels between Eastern and Western Germany, before and after reunification, and cities in England with the highest and lowest pollution, indicate that pollution does not cause asthma. Dr. Renzi further submitted that studies comparing cities with high pollution to those with low pollution have not found an increase in asthma in any age group. Dr. Renzi noted that studies actually show findings of less asthma in the cities with higher pollution.

SE2 submitted that severe asthmatics may be responsive to high enough levels of SO₂ or NO₂, but those same asthmatics are also going to be responsive to changes in temperature. SE2 further submitted that exposure to pollens, dander and dust mite feces can induce asthma. SE2 stated that stressors presented by emissions from the Power Plant would probably be less than the risks that asthmatics are facing in their everyday lives.

Dr. Renzi noted that he did not know of any studies on bronchietasis and submitted that, as it is rare, there would not be enough patients for a study. In respect of cardiovascular disease, Dr. Renzi submitted that while there have been some publications addressing the association of air pollution and cardiovascular disease, the level of pollution in Abbotsford is either below or amongst the lowest levels presented in these publications. Dr. Renzi further submitted that there is no information that pollution would compromise immune systems.

SE2 stated that it is very difficult to protect particularly vulnerable individuals from pollutants. SE2 further stated that these individuals are going to be responsive to a number of different stressors, including tobacco smoke, changes in diet, temperature and physical activity. Other stressors in residents' lives, in SE2's submission, would put them at greater risk than the emissions from SE2.

SE2 submitted that in the guideline-setting process, there is a recognition of a continuum in the level of protection that one can afford, and that the decision-makers have to make a choice with respect to each and every guideline, whether that guideline is intended to protect all individuals under all circumstances at all times, or most individuals under most circumstances at most times. In SE2's submission, it becomes virtually impossible to set a guideline that would protect all people under all conditions and that this is the position taken by the CCME and Health Canada. SE2 did not accept the position that there is no lower threshold for PM_{2.5} and ozone. SE2 submitted that there is no empirical data to suggest there is any health effect for PM_{2.5} levels

below $13 \mu\text{g}/\text{m}^3$ and that the World Health Organization has taken the position that one should not explore the effects of PM levels below $10 \mu\text{g}/\text{m}^3$ because there is considerable uncertainty. SE2 further submitted that the statistical methods that were used to set the Canada-Wide Standard probably overestimate the actual health impacts.

In looking at project approvals in Canada and B.C., SE2 noted that there are situations where emissions might result in an added concentration of a pollutant; however, SE2 submitted that while it could be said that it would be an effect that did not exist before, it does not mean that there is an impact.

SE2 submitted that while the Power Plant would result in slight changes in ambient air quality, there would be no measurable health effect.

6.2.3 Effects on Agriculture, Soils, Livestock, and Visibility

6.2.3.1 Position of SE2

Further to its dispersion modelling, SE2 stated that it had undertaken a more detailed assessment of the potential for NO_x , SO_2 and ozone to affect crops. SE2 submitted that the Power Plant would have only a slight effect on maximum baseline 1-hour, 24-hour and annual ground level concentrations of NO_2 and SO_2 in the Sumas Prairie or other nearby agricultural lands. Based on the Environment Canada modelling for ozone, only a small change in peak ozone concentrations would occur in the area less than 5 km from the Power Plant. SE2 submitted that, during ozone episodes, this would result in a minor change to potential ozone exposure for agricultural crops.

SE2 stated that it examined the potential effects of Power Plant emissions, specifically acid rain deposition, on soils. SE2 indicated that, based on predicted maximum acidic deposition rates, the data for the receiving environment, and a comparison with existing B.C. and Canadian Air Quality Objectives and Standards, the Power Plant would have an insignificant effect in the Lower Fraser Valley.

SE2 stated that CALPUFF modelling was undertaken to look at impacts of the Power Plant on visibility. Visibility effects were modelled along six lines of sight in the Lower Fraser Valley. Using the worst case assumptions, there would be a slight perceptible change in visibility along one of the lines of sight for up to four days per year. In SE2's submission, the sight line that would be most affected would be the general area to the northwest towards Mount Klautt.

6.2.3.2 Position of Intervenor

Intervenor examined SE2 on the potential for emissions from the Power Plant to affect important crops grown in the Lower Fraser Valley, including raspberries, blueberries and strawberries. Intervenor questioned whether there would be a potential for emissions to deposit on these or other crops and be consumed by humans. The concern of potential effects of emissions on livestock was also raised.

Several intervenors noted that a reduction in visibility, including views of Mount Baker, would be a major issue.

6.2.3.3 Response of SE2

SE2 stated that it considered possible exposures via the food chain; however, based on the chemical properties of the pollutants, the tendency of pollutants to be either in a gaseous state or to be very volatile and stay in a vapour state, the only significant pathway of exposure would be inhalation.

In respect of potential effects on livestock, SE2 stated that it had undertaken a livestock risk assessment. SE2 submitted that the assessment forced pollutants into the soil, plants and water so that the cattle and sheep might have an opportunity to ingest the pollutants. SE2 submitted it could not identify any significant risks for cattle or sheep.

SE2 further noted that modelled concentrations of pollutants from the Power Plant, together with background levels, would be below the most stringent B.C. and Canadian Air Quality Objectives and Standards. SE2 suggested that these standards provide adequate protection against adverse effects on soil, water, vegetation, animals and visibility.

Views of the Board

In the Board's view, SE2 has taken appropriate measures to minimize the air quality impacts of the Power Plant and has set a high standard for the design and operation of this type of plant. In forming this view, the Board notes that SE2 has committed to using natural gas with a defined sulphur content, to implementing BACT, and to minimizing the number of start up and shut down cycles.

The Board notes the efforts made by SE2 to find innovative solutions, such as its offset programs for GHGs, NO_x and PM, to address increases in emissions in the airshed; however, without cooperation from Canadians, it is uncertain that the offset programs would be able to achieve a 100 percent offset of GHGs, NO_x, or PM. In addition, it is observed that, even if 100 percent of the emissions of NO_x and PM from the Power Plant were offset at a regional level, local increases in these pollutants could still result. No further plans were proposed to reduce emissions over the operating life of the Power Plant or to curtail operations during episodes of adverse air quality.

The Board is satisfied that the information provided by SE2 regarding the types and quantities of pollutants that would be produced by the Power Plant is reliable and provides an adequate base on which to make a decision. The Board is also satisfied that the modelling undertaken by SE2 adequately predicts the maximum ground level concentrations of pollutants from the Power Plant and the locations in Canada where these maximum concentrations would occur. In reaching this view, the Board notes that MWLAP input and approval was obtained on the modelling protocol used by SE2 to determine the impacts of pollutants from the Power Plant on air quality in Canada. In addition, the GVRD and

Environment Canada participated in the preparation of the Joint Technical Report. Finally, the results of the UAM and the recommendations filed in a Letter of Comment by Environment Canada indicate no additional concerns or need for further modelling.

Accordingly, the Board accepts that the maximum concentrations of pollutants from the Power Plant, in combination with background levels, would likely be below the most stringent Canadian requirements and, hence, meet both the B.C. and Canadian Air Quality Objectives and Standards for these pollutants.

With respect to potential health impacts arising from the Power Plant, SE2's health risk assessment demonstrated that, although pollutants from the Power Plant would result in a change in ground-level concentrations of the pollutants in the Lower Fraser Valley, the change would be small and not likely to result in a measurable effect on human health. The Board accepts that, as the airshed exists today, the pollutants from the operation of the Power Plant would not be likely to result in demonstrable health effects in Canada, although pollutants from the Power Plant, in the worst case scenarios, could be an additional stressor for particularly vulnerable individuals.

The Board has considered the submissions of intervenors that the appropriate test for the Board to use in assessing the impact of emissions from the Power Plant is not whether emissions from the Power Plant would be within acceptable limits (*i.e.*, meet standards), but whether the concentration of pollutants from the Power Plant would be acceptable in the region. While the Board does not agree that this is the appropriate test to apply in reaching its determination, it is of the view that the acceptability of the potential effects within the region is a relevant factor for the Board to consider in reaching its determination. In assessing the acceptability of the emissions, the Board has had regard to the probable level of emissions from the Power Plant, the likelihood of future sources of emissions within the regional airshed, and local and regional goals with respect to air quality.

There was no dispute among parties that the Power Plant would contribute cumulatively to existing levels of pollutants in the airshed of the Lower Fraser Valley. Indeed, the evidence indicates that the Power Plant would be one of the 10 largest sources of pollutants in the Lower Fraser Valley and that pollutants other than NO_x and PM, the subject of SE2's offset program, would be emitted. In addition, SE2 acknowledged that the Power Plant would increase the amount of CO₂ equivalent emissions generated in the area, although its program to offset and mitigate CO₂ emissions could result in a reduction in the overall level of GHGs that would otherwise occur. Overall, however, the Board accepts that the emissions from the

Power Plant would add to existing levels of pollution in the Lower Fraser Valley airshed.

Further, the Board accepts the submissions made by the Government Intervenor that with the projected population growth in the Lower Fraser Valley, there will be additional sources of emissions. Indeed, as pointed out by SE2, the GVRD Air Quality Management Plan specifically contemplates new facilities which emit air pollutants. Accordingly, in the Board's view, it is likely that there will continue to be forces that negatively affect air quality in the Lower Fraser Valley. In addition, the Board acknowledges the submissions of the Government Intervenor that significant efforts have been made on the part of many parties to improve air quality within the Lower Fraser Valley. To date, such efforts have involved easily implemented and economical programs, but further improvements in air quality will require more expensive or aggressive programs. As a result, the Board is of the view that any assessment of the impacts of pollutants from the Power Plant must acknowledge the limited capacity of the airshed to accommodate additional pollutants without negative effect and the increasing costs of mitigative measures to reduce negative effects.

Lastly, the Board notes that it is the effects in Canada of the Power Plant, as designed and permitted by EFSEC, that are being considered by the Board. Accordingly, the Board makes no comment on matters pertaining to whether there are alternate technologies not proposed by SE2 that could have been used to generate electricity.

With respect to its proposed Condition A5 that it distributed for comment during the EH-1-2000 Hearing, the Board notes that it has considered comments received from SE2 and the Government Intervenor. In order to capture commitments made by SE2 during the EH-1-2000 proceedings regarding Power Plant emissions that may vary from the requirements set out in the PSD Permit, the Board has retained its proposed wording "...that the emissions from the operation of the Power Plant do not vary in kind or degree from the proposed emissions referred to in SE2's application or as otherwise adduced in its evidence in the EH-1-2000 proceedings." Where appropriate, the Board has also referenced SE2's PSD within Condition A5 in Appendix II.

The Government Intervenor also proposed an additional condition requiring SE2 to implement continuous air quality monitoring in Canada at locations to be determined by the Government Intervenor. The Board has not included this proposed condition as it is of the view that it would be more appropriate for SE2 to monitor Power Plant emissions at the stack, as it is required to do under its PSD permit. Therefore, should a Certificate be issued for the IPL, the Board would attach the condition proposed by SE2, under which it would file with the Board all

submissions required by the EFSEC, including those associated with stack tests and emission rates (Condition D6 in Appendix II). This would allow intervenors to access this information and to confirm compliance with commitments made with respect to emissions from the Power Plant.

6.3 Flooding

6.3.1 Position of SE2

SE2 stated that the proposed Power Plant site is 37 acres in size and that approximately 20 acres would be infilled. A pad for the Power Plant would be placed on top of the fill. The Power Plant site is located in a wide flood plain in the vicinity of Johnson Creek, which is the overflow corridor for the Nooksack River. The Nooksack River flows into the Sumas River, which then crosses the international border and flows north into Canada. The Sumas River flows into the Fraser River northeast of Abbotsford.

SE2 stated that it undertook modelling to assess the potential for the infilling of the Power Plant site to impact the overflow corridor for the Nooksack River as part of SE2's site certification process before EFSEC. Analysis showed that, in its present undeveloped state, the 37-acre site provides water storage capacity during flood events. After construction of the Power Plant, some existing water storage capacity would be partially lost due to the fill required. In addition, the water flow pattern may also be changed to a more defined flow path. As a result, some mitigation alternatives may have to be evaluated.

SE2 stated that it reviewed the Whatcom County unsteady state flood model to determine whether it could be used for assessing flood impacts from infilling of the Power Plant site and to determine how the model might need to be refined. The model was developed by Whatcom County as part of the lower Nooksack River Comprehensive Flood Management Plan. SE2 determined that the model scale was too broad to assess flood hazards specific to the Power Plant site and to determine whether flood water levels and flow paths would be impacted during smaller flood events. However, during large flood events, when the whole area would be under water, SE2 submitted that the model did provide accurate water surface profiles for the modelled area. To provide additional detail on potential flooding impacts of the Power Plant, SE2 also completed unsteady flow modelling under various watershed and flood conditions using software entitled FEQ.

SE2 submitted that the modelling showed no significant impact on flooding upstream of the proposed Power Plant site and no impact on, or perhaps even a slight reduction in, water elevations downstream of the proposed Power Plant site due to damming of floodwaters upstream of the site. SE2 stated that the existence of the Power Plant would have little or no effect on flooding in Canada.

6.3.2 Position of Intervenors

Intervenors expressed concerns about the impact of the fill and pad upon which the Power Plant would be built on flooding potential in Canada. In particular, intervenors questioned SE2 on the

potential for the Power Plant to increase water levels in Canada during flood events or to alter flow paths of flood water entering Canada.

The Government Intervenors raised a number of questions based on SE2's flood modelling work. In particular, the Government Intervenors questioned SE2 on the accuracy of model predictions and whether the unsteady flow model had been calibrated against existing flood data such as measured water levels. Questions were also raised as to the accuracy of data used in the model, such as that obtained from the Deming gauge on the Nooksack River. This gauge is known to be subject to variability. The Government Intervenors questioned SE2 on why it did not make use of 1995 flow records at the Huntingdon gauge on the Sumas River at the international border to verify the 1995 flood simulation results. SE2 was also questioned as to whether it had considered the possibility of an avulsion of the Nooksack River at Everson in the context of flooding impacts caused by the Power Plant. The Government Intervenors also asked whether mitigation measures that might be deemed necessary by Whatcom County to reduce flooding impact in the vicinity of the SE2 site might have an impact on flood water levels in Canada.

SE2 was questioned by intervenors as to why SE2's model did not extend to the Barrowtown Dam and Pump Station, which is located on the Sumas River near its confluence with the Fraser River. The purpose of the gates at Barrowtown is to prevent downstream water from backing up into the Sumas River. The Board requested clarification from SE2 as to why its modelling did not take into account the possibility of closing the dam at Barrowtown.

The Board asked SE2 whether the fill and pad at the Power Plant site would be subject to erosive forces during floods equal to or greater than the design flood, and what measures were provided to protect the fill and pad against erosion by floodwaters.

Other issues raised by intervenors included whether Power Plant access on all-weather roads was provided for during flood events, the appropriateness of siting the Power Plant in a floodplain, and SE2's response to date to concerns raised by interested parties about flooding.

6.3.3 Response of SE2

In response to the Government Intervenors' questions pertaining to model calibration and accuracy of predictions, SE2 agreed that some data used in modelling, such as those obtained from the Deming gauge, are subject to variability; however, it pointed out that the purpose of modelling is to predict the watershed response to various conditions in the watershed. In this case, the main issue being modelled is the change in flood water levels as a result of development of the Power Plant site. SE2 stated that modelling is not an exact science and requires some judgment to be applied on the part of the modeller. Nevertheless, SE2 submitted that for the purpose of estimating flooding impacts caused by the Power Plant, the models provide sufficiently accurate results.

SE2 stated that data from the Huntingdon gauge do not necessarily provide a more reliable estimate of flood discharge since multiple flow paths exist into Canada, not all of which may be captured by the Huntingdon gauge. SE2 did not make use of 1995 flow records at the Huntingdon gauge to verify the 1995 flood simulation results; however, SE2 submitted that this

omission does not compromise the utility of the modelling work for assessing potential impacts on water levels due to infilling associated with the Power Plant site.

With respect to the consideration of the gates at Barrowtown in its modelling, SE2 stated that, although it did not extend the model very far downstream into Canada, the flow downstream of the Huntingdon gauge is not particularly affected by operations at Barrowtown. SE2 submitted that the Southern British Columbia Railway bridge provides a suitable downstream boundary for the SE2 unsteady flow model. SE2 indicated that the resolving of modelling details on the Canadian side had been previously completed by a Canadian consulting firm during the initial modelling work done as part of the Whatcom County flood model. Further, SE2 stated that the opening of the gates at Barrowtown had not been explicitly modelled but that it would not make much difference as to the determination of the Power Plant's impacts on flooding. SE2 submitted that to determine whether the Power Plant would have an effect on downstream water levels, one must model the same set of physical conditions to determine if differences in watershed response exist. Specifically, model runs should be completed with the gates consistently either open or closed.

Similarly, with respect to avulsion of the Nooksack River into the Sumas drainage basin, SE2 stated that from a modelling perspective, the issue is not whether an avulsion will occur. Instead, the issue is one of consistency, in that model runs consistently either do or do not include an avulsion of the Nooksack River.

SE2 was also questioned on whether potential flood mitigation measures in Whatcom County could affect flooding in Canada. SE2 responded that, in theory, mitigation measures might impact water levels in Canada but it was very unlikely to occur since there are many hydraulic obstacles in the flow path between Sumas and the border that mitigate flood levels on the Canadian side. SE2 further indicated that any direct impacts on the Canadian side immediately north of the SE2 site were virtually impossible due to the 30-metre high hill that obstructs flow in that direction.

Regarding potential erosion of the fill and pad on which the Power Plant would be built, SE2 responded that it had not specifically considered erosion of the fill but indicated that velocities were very low in this area and that, if needed, passive control measures could be employed to protect the pad or fill from erosion.

With respect to other issues raised by intervenors, SE2 responded that the Power Plant is largely self-contained and has emergency procedures to deal with events such as flooding. In the event of extreme flooding however, the same issues hampering other facilities and residents would likely apply to the Power Plant, which could ultimately be shut down. In addition, the selected site is located in an area designated by the City of Sumas as an industrial development zone in the flood plain. SE2 stated that the City of Sumas considered effects of flooding when it designated this area for industrial development. Finally, SE2 pointed out some of the actions taken to respond to concerns related to flooding. SE2 submitted that these include an unprecedented flood modelling effort to identify potential impacts and mitigation measures, specifically the use of an unsteady flood flow. SE2 stated that, to its knowledge, this had not been undertaken by a private venture before.

Overall, SE2 submitted that no intervenor filed or presented evidence that the Power Plant would cause flooding effects in Canada or that mitigation is required. SE2 restated its position that the existence of the Power Plant would have little or no effect on flooding in Canada.

Views of the Board

The Board notes SE2's position that the purpose of the flood modelling is to predict the watershed response to flood events, under a variety of scenarios, with and without the presence of the Power Plant. The Board is of the view that despite debate over the input parameters used in the modelling efforts and whether certain model runs should have been calibrated against actual flood events, the modelling shows the relative change in water elevations in Canada to be negligible.

Regarding the status of the gates at Barrowtown, the Board accepts SE2's position that the flow downstream of the Huntingdon gauge is not particularly affected by operations at Barrowtown and that the status of the gates was modelled consistently in the modelling efforts. Thus, the relative change in water level should not be substantially affected.

The Board notes that there is some uncertainty as to the potential effect that the Power Plant would have on small to medium sized floods; however, natural barriers exist to mitigate against such flood effects in Canada. The primary concern is with larger flood events. The evidence indicates that the fill and pad for the Power Plant site could have the effect of reducing flood effects in these situations. The Board is of the view that in larger 100 to 200 year flood events, the fill required for the Power Plant would have either no effect on flooding in Canada or could reduce the negative effect of these events downstream of the Power Plant in Canada.

The Board notes that it is the effects of the Power Plant as approved that are being considered in these Reasons. Accordingly, the Board makes no comment on discussions pertaining to zoning or the appropriateness of siting the Power Plant in a flood plain.

The Board is of the view that whether the Power Plant is designed to withstand flooding would only be relevant to the Board's consideration in the event that the presence of the Power Plant could result in adverse cross-border flood effects. It has not been demonstrated that materials stored at the Power Plant or used in the fill and pad would be of specific or unique concern, either due to their toxicity or volumes, nor that these materials could be transported into Canada by floodwaters. Possible accidents or malfunctions of the Power Plant are addressed in Section 6.7 of these Reasons. Accordingly, the Board is of the view that further consideration of the design of the Power Plant with respect to potential effects on the Power Plant by flood waters is not necessary.

6.4 Groundwater

6.4.1 Position of SE2

Water supply for the Power Plant's cooling system would be extracted from the Abbotsford–Sumas Aquifer (Aquifer) that straddles the Canada/U.S. border. SE2 stated that the Aquifer is composed of a succession of glaciofluvial sands and gravels with minor clay lenses. It is the largest unconfined aquifer in the Lower Fraser Valley area, occupying a total area of approximately 200 km² on both the B.C. and State of Washington sides of the international border. Groundwater recharge occurs by infiltration of precipitation and seepage from surface water. Annual groundwater recharge from precipitation is approximately 12 billion imperial gallons (56 billion L).

SE2 stated that the direction of groundwater flow is generally from northwest to southeast, from Canada into the U.S. The estimated extractable groundwater reserves in the Aquifer are approximately 54 billion imperial gallons (245 billion L). Groundwater resources in the area are widely used as a source of water supply by municipalities, industry and agriculture.

SE2 would purchase water for use in the Power Plant from the City of Sumas. SE2 stated that normal operation would require approximately 635 U.S. gallons per minute (gpm) (529 imperial gpm; 2,403 L/min), with a maximum water demand of 802 U.S. gpm (642 imperial gpm; 3,036 L/min). Groundwater would be drawn from the Sumas Municipal and May Road well fields. Proposed annual groundwater extraction for the Power Plant is 0.4 billion imperial gallons (2 billion L), approximately four percent of annual recharge. SE2 submitted that the increased pumping rate from Sumas wells would have a negligible effect on groundwater quantity and quality in B.C.

SE2 evaluated potential impacts to existing groundwater supply through modelling. Although it stated that no significant negative impacts were anticipated, SE2 proposed to perform pre- and post-Power Plant operation monitoring to confirm model results and determine if groundwater supplies in Canada would be negatively affected. This would include private wells and springs in Canada. SE2 would provide mitigation for any wells determined to be adversely affected by the Power Plant operations. SE2's monitoring and mitigation program was established as part of the EFSEC proceedings regarding siting of the Power Plant.

SE2 stated that groundwater quality from the May Road well field is good and meets all U.S. State and Federal standards, with the only exception being high nitrate concentrations. Groundwater produced from the City of Sumas Municipal well field is of an excellent quality and meets all U.S. state and federal standards.

In those areas where the Aquifer is unconfined, it is very susceptible to contamination from land activities. The infiltration of nitrates from the ground surface into the Aquifer can cause local deterioration of groundwater quality. SE2 stated that the Power Plant would not be a source of nitrates and that the groundwater withdrawal would not affect groundwater quality. If nitrate effects occurred, they would likely be on the U.S. side of the Aquifer. SE2 has offered to help the City of Sumas address a nitrate contamination problem if it arises and to provide the City with \$25 000 (US) a year to use for Aquifer protection and water rights acquisition during the period

of Power Plant operation. SE2 submitted that local spills of fuel or process chemicals that may occur during Power Plant operation would not pose a threat to groundwater quality in Canada, considering the hydrogeological setting. In response to the Board, SE2 provided a listing of the materials and their quantities used or stored at the Power Plant, and the standard measures that would be taken to store, monitor and address any potential spills of the materials.

6.4.2 Position of Intervenor

Numerous intervenors expressed concerns about the impact of Power Plant operations on groundwater reserves, water quantity and quality of wells in Canada, as well as SE2's commitment to mitigate any negative impacts.

Intervenor questioned SE2 on the availability of data regarding the actual number of wells and springs within the potentially affected zone in B.C. Intervenor submitted that SE2 should have conducted a survey identifying all of the potentially affected wells and springs prior to the hearing before the Board. Environment Canada also commented on groundwater issues and submitted that the effects of the water withdrawal would not be known until the Sumas well fields were in full production and the effects were monitored.

Intervenor requested clarification related to proposed groundwater monitoring and raised questions regarding mitigation in case of impact on an individual Canadian groundwater user. Concerns were also raised regarding participation by well owners in SE2's proposed groundwater monitoring program and the timeframe within which SE2 would respond to any potential impacts. The Government Intervenor also raised issues relating to the groundwater mitigation program that was established as part of the EFSEC proceedings, submitting that the mitigation would not protect Canadian interests. The Board questioned SE2 as to timing of its response to any adverse impacts that might occur to a well or spring in Canada as a result of pumping for the Power Plant.

The issue of groundwater and surface water interaction was also raised by some intervenors. It was suggested that development of a drawdown cone around well fields that extends to a stream or a river may result in a lower rate of flow in surface drainage features. In particular, reduced flow in the Sumas River, where it flows into Canada, was a concern to intervenors.

Concerns were also raised by intervenors regarding the potential for new or increased groundwater contamination resulting from increased pumping of the Sumas well fields. The primary issue raised was the potential for nitrates and other contaminants to be concentrated in residential wells. SE2 was also questioned on emissions from the Power Plant exhaust stacks and the potential for these emissions to impact groundwater quality on the B.C. side of the Aquifer.

6.4.3 Response of SE2

SE2 reiterated its position that the proposed annual extraction of groundwater for the Power Plant is only a fraction of the annual recharge and a very small portion of the total extractable groundwater reserves in the Aquifer, four percent and one percent respectively. SE2 also stated that the proposed water withdrawal for the Power Plant would fall within existing City of Sumas water rights; that is, even if the Power Plant was not built, the same amount of withdrawal could

be allocated by the City to another use. Water rights held by the City of Sumas are granted by the Washington Department of Ecology, which assesses impacts to pre-existing water users and the environment as part of its water rights allocation process.

Regarding potential quantity effects on wells in Canada, SE2 referred to its proposed monitoring program, which includes an evaluation of impacts on private wells and springs in Canada and mitigation for any wells determined to be adversely affected by increased water withdrawals for the Power Plant; however, SE2 acknowledged that the impacts on wells in Canada and their relationship to seasonal and long-term fluctuations in the Aquifer cannot be properly addressed until a monitoring program is in place. SE2 confirmed that it was committed to the groundwater mitigation measures attached to its EFSEC SCA and also agreed that any condition attached to a Board Certificate could be enforced by the Board.

In response to Board questions regarding timing of mitigation, SE2 stated that it would respond immediately to evaluate any problems and implement appropriate mitigation. SE2 stated that to mitigate impacts to existing wells, it would consider deepening existing wells, drilling a second well, or providing a replacement well or alternate water service.

SE2 noted that the primary reason that its initial survey of wells was incomplete at the time of the Board hearing was that well owners in B.C. are not required to register their wells and give notification to regulators as to their location or the amount of withdrawals until they hit a cap of 1,000 imperial gpm (1249 U.S. gpm) use. The maximum amount of water withdrawal for the Power Plant (642 imperial gpm; 802 U.S. gpm) would not trigger the need for an environmental assessment in B.C.

Following a directive from the Washington State Department of Ecology, SE2 investigated the issue of surface-groundwater interactions through a seven-day pumping test. Test results indicated that a potential impact of groundwater withdrawal for the Power Plant was reduced discharge from a local spring. This could affect water levels in Johnson Creek, which flows into the Sumas River. As mitigation, the City of Sumas would be required to replace the lost water in Johnson Creek and, therefore, the Department of Ecology concluded that it was not necessary to look further at reduced flows in the Sumas River.

Regarding the potential for increased nitrate contamination as a result of water withdrawals for the Power Plant, SE2 acknowledged that it is not really possible to predict the effects of water withdrawal on nitrate concentrations at a particular well site until after pumping has begun. However, SE2 restated that the Power Plant would not be a source of nitrates and it is not likely that water withdrawals for the Power Plant would result in increased nitrate concentrations in wells in Canada. SE2 submitted that increased drawdown does not necessarily have an effect on water quality and that water quality can change whether the drawdown occurs or not.

Overall, SE2 submitted that, with full implementation of mitigation measures outlined in the EFSEC SCA and SE2's commitments to the Board, there would be minimal, if any, groundwater effects in Canada.

Views of the Board

The Board notes that proposed water withdrawals for the Power Plant would occur under existing water rights already allocated to the City of Sumas. These rights were obtained under the appropriate U.S. legislation and it is within the purview of the City of Sumas as to how it chooses to allocate such rights. Any potential effects on the Aquifer could be incurred even in the absence of construction of the Power Plant.

The Board is also cognizant that the maximum amount of water allocated for withdrawal by the Power Plant (642 imperial gpm; 802 U.S. gpm) would be less than the amount required (1000 imperial gpm; 1249 U.S. gpm) to trigger an environmental assessment should the withdrawal occur in B.C. Nonetheless, there is evidence that the proposed withdrawal for the Power Plant could affect water quantity in private wells and springs in Canada. The Board notes that the true extent of these effects is currently not known, although the evidence indicates that any such impacts are likely to be small. However, SE2 has committed to an extensive monitoring program that would assist in confirming the modelling results of effects on water quantity within wells and springs in Canada. In the event that the IPL was approved, the Board would condition the Certificate to require SE2 to report to the Board on the results of its groundwater monitoring and mitigation program (Condition D4 in Appendix II).

SE2 has also committed to provide appropriate mitigation to any party impacted by changes to water levels as a result of water withdrawals for the Power Plant. However, the Board notes that there is uncertainty as to the timing and types of mitigation to be employed as mitigation will ultimately be dependent upon case-specific and site-specific factors. Again, the Board notes that it would attach Condition D4 in Appendix II to any Certificate issued.

Regarding the lack of a comprehensive survey of wells and springs in Canada, the Board acknowledges SE2's challenge in obtaining accurate data on well and spring locations in Canada as there is no requirement in B.C. to register groundwater withdrawals below a specified level. The Board is satisfied that SE2 has used an appropriate level of effort at this time.

Regarding reductions in water quality within the Aquifer due to water withdrawals for the Power Plant, the Board is of the view that there is insufficient evidence to indicate that water quality within wells in Canada would be adversely affected. Potential contaminants stored or used at the Power Plant would be regulated in accordance with the relevant U.S. legislation and the mitigative measures identified by SE2 would address the potential for these contaminants to affect either groundwater or surface

water quality. The Power Plant would not be a source of nitrates and there is insufficient evidence to indicate that increased pumping would result in an increased transfer of nitrates to an individual well. The hydrogeological setting indicates that if any wells were subject to increased nitrate contamination, these wells would most likely be in Washington State. Effects on wells in Washington were dealt with as part of the EFSEC proceedings. Notwithstanding the above, the Board would expect that SE2 would respond appropriately to any nitrate contamination complaints from well or spring users in Canada and include the results of any nitrate contamination investigations in its monitoring submissions to the Board.

Issues were also raised regarding the potential for Power Plant emissions to adversely affect water quality in Canada. The Board is of the view that no further assessment is warranted, with regard to water quality, for contaminants that are below the Canada-Wide Standards for Particulate Matter (PM) and Ozone, the National Ambient Air Quality Objectives, and provincial air quality objectives. A more thorough discussion of issues pertaining to air quality is provided in Section 6.2 of these Reasons.

The Board is of the view that effects on wells or springs in Canada associated with increased water withdrawal for the Power Plant would likely be small. Nonetheless, there is potential for the proposed withdrawal to negatively affect water quantity in private wells and springs. SE2 has committed to monitor for and respond to any such effects (Condition D4 in Appendix II).

Further, regarding Condition D4 in Appendix II, the Board notes that it considered the comments received from the Government Intervenors on the original draft of this Condition (D4) distributed for comment during the EH-1-2000 hearing. In accord with these comments, the Board would include a requirement for SE2 to notify the Government Intervenors of any submissions made to the Board pursuant to clauses a), b), c), or d) of the Condition. The Government Intervenors also suggested that Condition D4 be revised to require SE2 to suspend operation of the Power Plant in instances where complaints about groundwater remain unresolved. The Board would not include this suggestion in the Condition as the Board notes that it does not have any jurisdiction over the operation of the Power Plant. The Board would have jurisdiction over the IPL if approved; however, the Board is of view that the proposed wording would be too broad in scope to practically enforce. The Board is of the view that Condition D4 in Appendix II would provide an appropriate mechanism by which concerns over potential groundwater effects could be monitored and if need be, addressed by the Board.

6.5 Wastewater Discharge

6.5.1 Position of SE2

Wastewater from the Power Plant would be discharged to the City of Sumas sewage system and be subsequently treated at the JAMES Treatment Plant. The predominant component of wastewater from the Power Plant would be effluent from the Power Plant's cooling system, but office/plant employee domestic waste would also be discharged to the sewage system.

SE2 stated that the composition of the Power Plant wastewater would be identical to the composition of wastewater currently discharged from the existing Sumas Energy 1 (SE1) power plant. This wastewater is primarily raw water containing treatment additives and naturally occurring impurities, such as salt, minerals, and iron, that are concentrated as a result of evaporation. SE2 stated that the treatment additives used are specifically selected to minimize any likelihood of injury to humans or the aquatic environment. SE2 stated that wastewater from the SE1 power plant is monitored and tested for compliance with all applicable Canadian environmental laws, including FVRD regulations and Abbotsford bylaws.

SE2 stated that wastewater from the Power Plant would comprise less than one percent of the total domestic and industrial flows treated at the JAMES Treatment Plant. SE2 also pointed out that discharges from the JAMES Treatment Plant to the Fraser River are registered under, and must comply with, the B.C. Municipal Sewage Regulations.

SE2 stated that the Power Plant would have a laboratory to conduct water treatment testing and monitoring to ensure that water chemistry would be maintained as specified by vendors of the additives and the relevant FVRD regulations and Abbotsford bylaws. Additionally, SE2 would conduct bioassays using representative aquatic species as part of the monitoring program. The purpose of the bioassays would be to test the toxicity of the wastewater to ensure that it could be discharged without threat or harm to aquatic life forms.

SE2 submitted that, based on its monitoring of the SE1 power plant wastewater, wastewater from the Power Plant could be safely discharged without threat of harm to treatment systems, human health, or the receiving environment.

6.5.2 Position of Intervenors

Mr. Alden, on behalf of the United Injured and Disabled Workers Association, expressed numerous concerns regarding the potential environmental effects of discharge from the JAMES Treatment Plant on aquatic species within the Fraser River. Mr. Alden questioned SE2 on the temperature of the wastewater and subsequent temperature of discharge from the JAMES Treatment Plant. Mr. Alden also raised concerns about the chemical make-up of the wastewater and its potential toxicity to fish, particularly salmon and white sturgeon. He also questioned SE2 on the laboratory testing of toxicity of chemical additives within the wastewater. In particular, Mr. Alden and other intervenors questioned why species used in the toxicity tests, with the exception of rainbow trout, were not native to the Fraser River.

Many other intervenors raised similar issues. In addition, other issues raised by numerous intervenors included effects of spills at the Power Plant site on water quality of the discharge, disposal of and potential environmental effects associated with the solid waste products that would be generated by the Power Plant's reverse osmosis cooling system, and metering of the total discharge of wastewater from the Power Plant.

6.5.3 Response of SE2

With respect to toxicity concerns expressed regarding the Power Plant wastewater, SE2 stated that the chemicals that may be found within the Power Plant wastewater are benign and innocuous from an environmental impact perspective. These chemicals include minerals and naturally occurring salts, which would be concentrated due to the cooling process, and the additives that would be used for scale, fouling, and corrosion control. Toxicity testing for the additives that may be found in the wastewater has not indicated that the chemicals present an environmental hazard.

SE2 stated that the fish species used in the toxicity tests are representative aquatic species that are commonly used to assess the impacts of chemicals on aquatic species. The species chosen have a long history of use and are selected because they are generally more sensitive to toxins than fish in the wild.

SE2 pointed out that effluent from the Power Plant would be monitored for chemicals and toxicity tests would be undertaken regularly, including testing for metals. Monitoring to date on the SE1 power plant discharges has revealed that the metals tested for, if present, are below the analytical detection limits. Additionally, effluent discharged from the JAMES Treatment Plant is tested to ensure that it meets certain standards in terms of suspended solids and biological oxygen demand, coliform counts, pH, and toxicity.

SE2 submitted that the temperature of the discharge from the JAMES Treatment Plant would be near ambient levels due to the nature of the processing that the water would go through. Included within the JAMES Treatment Plant discharge would be the Power Plant discharge, which similarly would drop in temperature upon receipt into the Sumas and the Abbotsford sewer systems. The drop in temperature would be due to dilution, aeration, and clarification processes and transit times that it would be subjected to along the way.

SE2 stated that disposal of byproducts from the reverse osmosis system would be done in accordance with applicable legislation and guidelines.

Views of the Board

The Board notes that wastewater from the Power Plant would not be directly discharged into the receiving environment but rather into an existing sewer system, with subsequent treatment at the JAMES Treatment Plant. SE2 has demonstrated that there are a variety of standards that must be met in order to discharge into the City of Sumas and the Abbotsford sewer systems. Regular testing would be undertaken by SE2 to promote compliance with these standards. Further, the JAMES Treatment Plant

must also test its discharge, of which SE2 wastewater would be only one component, for compliance with applicable provincial and municipal legislation and guidelines.

Regarding toxicity of the wastewater from the Power Plant, the Board notes that toxicity testing does not indicate that the chemicals present within the wastewater pose an environmental hazard. The toxicity testing relied upon by SE2, including the fish species used, is typical of that undertaken when evaluating the toxicity of chemical substances.

The evidence presented regarding toxicity of the wastewater, when considered in conjunction with the evidence on the treatment that the wastewater would receive at the JAMES Treatment Plant, indicates that negative environmental effects within the Fraser River would likely be negligible.

Regarding other matters raised by intervenors such as the disposal of by-products from the cooling system, potential effects from spills, and metering of the wastewater discharge, the Board notes that SE2 would be regulated under applicable U.S. federal, state, and municipal legislation pertaining to these topics.

The Board has no outstanding concerns regarding the environmental effects in Canada associated with discharge of wastewater from the Power Plant.

6.6 Noise

Issues associated with noise from the IPL, and cumulatively from the IPL and Power Plant, are discussed in the ESR and in Chapter 4, IPL Design and Engineering. However, increases to existing noise levels as a result of the operation of the Power Plant, particularly the presence of low frequency noise, were also identified as a concern to Canadians.

6.6.1 Position of SE2

SE2 selected two sites for assessment of overall noise levels. SE2 submitted that these sites would be the nearest impacted residences and would be the most affected by the noise from the IPL and the contributions of the IPL and the Power Plant together. Existing ambient noise levels were found to be 41 and 42 dBA (A-weighted decibel scale).⁴⁷ Maximum increases in ambient noise levels above the L_{90} (noise levels exceeded 90 percent of the time) existing nighttime levels, in adverse conditions, were predicted to be 44 and 42.7, respectively. SE2 submitted that this increase was 3 dBA or less and an increase of this magnitude would generally not be noticeable and would be below the nuisance level. Nighttime noise levels were selected, as these, being lower than daytime levels, would be most affected by the IPL and Power Plant. In response

47 A-weighted scale means the sound level as measured on a sound level meter using a setting that emphasizes the middle frequency components similar to the frequency response of the human ear.

to intervenors, SE2 further explained how meteorological conditions, such as wind or inversions, could affect noise levels and the modelling results. In the absence of an applicable noise bylaw for Abbotsford, SE2 compared increased noise levels with the 45 dBA nighttime level set out in the Vancouver bylaws and submitted that the noise levels would be below this limit. SE2 stated that if noise levels from equipment selected for the Power Plant posed problems, this would be addressed in the final design of the Power Plant, by requiring quieter equipment or by installing noise control equipment such as silencers or barriers.

Low frequency noise was an issue raised in the EFSEC proceeding and several recommendations were included in the Final Supplemental Environmental Impact Statement (FSEIS) on how to determine what would be acceptable in the absence of specific standards or guidelines that would apply to the Power Plant. Initially, SE2 stated that it did not expect low frequency noise to be a concern and objected to modelling low frequency noise, as requested by intervenors, due to the burden this imposed. However, at the direction of the Board, SE2 submitted results from modelling low frequency noise levels from the Power Plant. SE2's position with respect to the impact of low frequency noise was that, in the experience of its noise expert, low frequency noise is not likely to be a problem for combined cycle plants as the heat recovery steam generators act as effective reactive silencers (*i.e.*, mufflers) due to their large size.

6.6.2 Position of Intervenors

Intervenors raised several concerns related to noise impacts, including the validity of the modelling results and predictions of noise levels. Intervenors also questioned whether the selected sites used to measure existing noise levels were appropriate, whether noise from the existing SE1 power plant was measured in the background levels, the appropriateness of using a municipal bylaw from Vancouver for evaluating the effects of noise in the Sumas/Huntingdon area, and whether SE2 provided sufficient, and accurate, information on the levels and effects of low frequency noise.

Some intervenors faulted SE2 for only using two sites in Canada for measuring overall background, or existing, nighttime noise levels. Intervenors questioned SE2 on whether the two sites selected by SE2 would actually experience the maximum overall noise impacts in Canada or whether factors, such as hills or vegetation, would reduce the noise levels experienced at these sites.

With respect to low frequency noise, a number of intervenors were concerned that SE2 had not responded to their questions until directed to do so by the Board. In the view of intervenors, this potential issue had been raised in EFSEC's FSEIS and had not been satisfactorily addressed by SE2 in its application to the Board.

The Government Intervenors further explored the potential impacts of low level noise and the magnitude of an increase in low frequency noise that would be perceived as a doubling of noise levels. In addition, the Government Intervenors also explored whether there would be a possibility for either tonal noise or periodic beats with two generators at the Power Plant.

6.6.3 Response of SE2

SE2 stated that it is committed to engage in a process of equipment selection, design, modelling and mitigation to avoid reasonably objectionable noise. SE2 further committed to select, in consultation with the Province of B.C. and the City of Abbotsford, up to six sites in Abbotsford and Huntingdon to establish baseline noise levels and to analyze noise impacts from the Power Plant. SE2 suggested that requirements pertaining to reporting on noise monitoring set out in the SCA also be included in any authorization issued by the Board.

With respect to the impact of low frequency noise and what would be perceived as a doubling of levels, SE2 repeated that it does not expect low frequency noise to be a concern. SE2 stated that neither Abbotsford, the Province of B.C. nor Canada has regulatory limits, standards or guidelines that single out low frequency noise, as most jurisdictions use the A-weighted decibel scale. SE2 provided the State of Oregon guideline (see Table 6.6.1), which, it stated, was very stringent. Further, SE2 compared the State of Oregon guideline with the modelling results that predicted low frequency noise levels in Canada. Modelling results were shown as contours ranging from 40 dB to 65 dB for the 31.5 Hertz (Hz) range and from 40 dB to 60 dB for the 63 Hz range. SE2 submitted that these noise levels would be below the Oregon guideline, except for a small area just east of the Customs building at the Canada/U.S. border. For this area, the results for the 31.5 Hz octave band were predicted to be 66 dB, one dB above the Oregon guideline. However, SE2 redirected the intakes to the gas turbines on the Power Plant (from east to west facing) and ran the model again. With this mitigation, SE2 submitted that the predicted noise level would drop below the Oregon guideline for all of Canada.

Table 6.6.1
State of Oregon Low Frequency Noise Guideline

Octave Band (Hz)	Decibels (dB)
31.5	65
63.0	62

SE2 stated that the SCA between SE2 and Washington State requires SE2 to conduct pre- and post-start-up monitoring and to immediately install noise mitigation if necessary to comply with project-specific criteria for low frequency noise. In response to the Government Intervenors, SE2 acknowledged that the SCA did not require low frequency noise levels to meet the standards or regulations suggested in the FSEIS. However, SE2 stated that the Oregon State noise guideline would be used during the design process as the target for any future noise modelling. Furthermore, SE2 suggested that requirements pertaining to reporting on noise monitoring set out in the SCA also be included in any authorization issued by the Board, and SE2 provided a draft condition to this effect.

Views of the Board

The Board is of the view that the assessment of overall noise levels by SE2 is adequate. The Board accepts that ambient nighttime noise levels are expected to be the lowest and, therefore, most likely to be impacted by the operation of the Power Plant. SE2 has taken a reasonable approach in ensuring that maximum increases in overall noise levels would be limited to 3 dBA or less from the existing nighttime L_{90} levels. On this basis, the Board is of the view that the overall noise levels of the IPL and Power Plant would not likely be noticeable to area residents. As to whether the two sites selected for measuring background levels would be the most affected, the Board notes that SE2 is aware of intervenor concerns and would be expected to address any necessary modifications to the sites used in its modelling during the final design of the facility.

With respect to low frequency noise, the Board is satisfied with SE2's commitment during the oral hearing that it would be working to the Oregon State noise guideline with respect to the modelling during the detailed design of the Power Plant. The Board finds the Oregon guideline to be an acceptable measure of what "reasonably objectionable noise" would be.

The Board notes that Conditions 1.1, 2, and 3 of the EFSEC SCA require SE2 to conduct pre-construction noise monitoring and report on the results to the City of Abbotsford and the Province of B.C., along with other named stakeholders. Furthermore, these conditions require SE2 to pay close attention to noise control issues during the detailed design of the Power Plant, and install numerous noise attenuation features, many of which would address low frequency noise and tones. The Power Plant design must also allow for the installation of additional noise attenuation equipment or sound barriers, as appropriate, after operation has commenced. SE2 confirmed that it was committed to the noise mitigation measures attached to its SCA. In support of its commitment, SE2 also provided to the Board a potential Certificate condition that would require it to report on its noise monitoring program.

While the Board is satisfied that low frequency noise from the Power Plant would not likely result in adverse effects on Canadians, it is cognizant of intervenors' requests to ensure that Canadians have a course of redress if the actual effects are greater than those predicted by SE2. The Board has considered SE2's potential condition, and has developed a Condition (Condition D5 in Appendix II), which is consistent with the wording in the SCA, pertaining to noise monitoring. This condition would require SE2 to report to the Board the results of its noise monitoring program, including any mitigation measures incorporated into the Power Plant after operation has begun. The Board would then have the authority to order SE2 to cease operation of the IPL in the event that low frequency noise from the

operation of the Power Plant caused adverse effects to Canadians, and these effects were not addressed to the Board's satisfaction. The Condition would also require SE2 to notify the Government Intervenors of any submissions made to the Board pursuant to clause b) of the Condition.

6.7 Seismic Activity

The proposed Power Plant and IPL would be situated in an active seismic area and in proximity to two possible geological faults, the Vedder Mountain and the Sumas Fault. Intervenors raised concerns about the potential effects of seismic activity on the Power Plant and subsequently, the effects on Canadians of any failure of Power Plant components. Concerns regarding the effect of seismic activity on the IPL were also identified and have been discussed in the ESR and in Chapter 4, IPL Design and Engineering.

6.7.1 Position of SE2

SE2 submitted that the Power Plant does not present unique public safety risks, even locally in Sumas. SE2 characterized any potential failure of the Power Plant as having risks similar to a pipeline failure, and noted that there are many pipelines located in the area. Further, SE2 noted that, with the exception of natural gas, there are no significant quantities of hazardous materials stored at the site.

SE2 identified two possible outcomes of seismic activity that could affect the Power Plant: rupture of an aqueous ammonia tank at the Power Plant site and liquefaction of soils. With respect to aqueous ammonia, SE2 submitted that it does not represent a hazard to the general public and, further, it would be surrounded by a containment area. In the event that liquefiable soils are present at the site, SE2 could take steps to densify the soils, excavate and replace the soils, or place the pile foundation supports so that they transfer loads to competent soils below liquefiable layers.

In the SCA, SE2 committed to undertake a detailed geotechnical investigation to establish the areas and extent of liquefiable soil layers at the Power Plant site. Furthermore, SE2 committed to perform a site-specific probabilistic seismic hazard assessment (PSHA) prior to final design of the Power Plant. The PSHA would allow for the determination of a design earthquake, which is the level of shaking intensity that an engineering seismologist determines would be probable for that site. The Power Plant would be built to withstand that intensity of shaking. It was SE2's stated opinion that, with the information obtained through the geotechnical investigation and PSHA, engineering solutions could be developed for a broad range of possible seismic events at the Power Plant site. SE2 also stated that no environmental effects arising from such seismic damage would be felt in Canada.

6.7.2 Position of Intervenors

Several intervenors raised concerns about safety with the Power Plant and submitted evidence on the proximity of the Power Plant to seismic faults in the region, the possibility of the soils liquefying, and whether in fact it would be possible to design an appropriate foundation to

withstand seismic effects. Further, parties argued as to how, in the absence of a final design, they could effectively examine the project.

6.7.3 Response of SE2

In response to specific questions on the design of the facility, SE2 stated that, using standard U.S. Geological Survey data and maps and a preliminary soils investigation, a preliminary assessment indicated that there would be no environmental effects arising from seismic damage that would be felt in Canada. Furthermore, SE2 stated that it had committed to undertake a PSHA as part of its final design. SE2 submitted that a final design would not be undertaken until it had received the necessary authorizations to proceed with the project and that these details were not necessary to evaluate the project.

Views of the Board

In considering potential effects of seismic activity on the Power Plant, it is important to reiterate the Board's ruling that it would only consider the environmental effects of the Power Plant in Canada. Accordingly, it is only the effects of seismic activity on the Power Plant that could result in adverse effects in Canada that are relevant.

Parties have raised safety concerns associated with the siting and design of the Power Plant. The Board is of the view that the geotechnical investigation and the PSHA would provide SE2 with sufficient information to design the Power Plant to withstand seismic activity in the area and to mitigate against public safety risks. Accordingly, the Board is of the view that it is unlikely that there would be environmental effects in Canada associated with damage to the Power Plant from seismic activity.

Chapter 7

Aboriginal Consultation

Aboriginal intervenors included the Stó:lō Nation, the Matsqui First Nation, the Scowlitz First Nation, the Sumas First Nation and Grand Chief Dr. Rose Charlie of the Chehalis First Nation. Of these, the Stó:lō Nation and Grand Chief Dr. Rose Charlie took an active part in the Board's hearing process. Both of these parties raised the issue of aboriginal consultation in their submissions.

(Further details related to the assessment of potential impacts on archaeological resources and traditional use, as distinct from consultation matters, are found in the Board's ESR.)

7.1 Position of SE2

SE2 stated in its application and in response to information requests from the Board that it was unaware of any Crown consultations with First Nations in respect of the IPL. SE2 stated that it had contacted the Stó:lō Nation, comprised of 21 *Indian Act* bands, in respect of its application. SE2 stated that it had also contacted directly the Sumas and Matsqui First Nations bands, which are a part of the Stó:lō Nation.

SE2 submitted that it first contacted the Stó:lō in July 1999 to obtain a Heritage Investigation Permit (#1999-039) for the archaeological impact assessment of the IPL corridor. Following several subsequent related contacts, SE2 held a meeting with the Stó:lō on 24 March 2000. SE2 submitted that no concerns with respect to the IPL were expressed at that meeting.

In response to a Board information request, SE2 provided a list of its correspondence and telephone conversations with First Nations between July 1999 and 23 January 2001.

In a letter dated 4 March 2003, SE2 asked the Stó:lō for further consultations, with respect to the possible effects of the project and in regard to conducting a Traditional Use Study (TUS). On 18 April 2003, SE2 sent a letter to 24 Stó:lō First Nations inviting them to a Stó:lō Referral Advisory Committee (RAC) meeting for 28 April 2003, at which SE2 would be present.

In the above mentioned correspondence to the Stó:lō Nation specifically, SE2 indicated that it was prepared to give fair consideration to any concerns that the Stó:lō may have, to make its own experts available to answer any questions, to conduct studies as are reasonably appropriate, and to provide reasonable capacity funding. SE2 also asked the Stó:lō to identify the impacts they think the IPL or Power Plant will have on the Stó:lō's claims of aboriginal rights and title. SE2 also noted that some of the reserves of the Stó:lō First Nations who were notified are beyond the area of any potential impact from the Power Plant's operation.

During the hearing, SE2 confirmed that it had recently started a process of consultation around the issues of aboriginal rights and title, that it had had a meeting with the Stó:lō RAC, that it was arranging to do a cultural use study, and that the consultations were continuing.

7.2 Position of the Stó:lō Nation

The Stó:lō indicated that their traditional territory covers approximately 3.2 million acres of land and a map indicating the boundaries of the territory was submitted. The general boundaries of the territory extend from Vancouver to an area west of Hope, north to Spuzzum, northwest to Mount Garibaldi north of Squamish, and then south to Vancouver. The Stó:lō submitted that these lands have never been ceded or surrendered and that they are currently involved in the B.C. Treaty Process, which can be expected to continue for many more years.

The Stó:lō stated in evidence that they have a very clear understanding of their aboriginal rights and title based upon countless generations of occupation, use and management of their resources and self-government. They stated that they exercise and assert aboriginal rights and title to their territory.

In their 14 February 2003 evidence, the Stó:lō stated that they were unable to provide evidence on the specific environmental effects of the Power Plant in Stó:lō territory since they lacked the resources to review SE2's technical environmental information. Nonetheless, they outlined a number of concerns regarding the environmental impacts from the Power Plant within their traditional territory. These concerns include impacts on air quality; on waterways, wetlands and fish habitat; on their ability to access resources; from the Power Plant's water usage and effluent discharge; and to their land and fisheries resources. The Stó:lō were also concerned over the impacts that they said the SE2 project would cause to their existing aboriginal rights and title.

The Stó:lō submitted that the resources they rely on have faced detrimental impacts due to colonization and urbanization and their ability to access their resources within their territory has diminished at alarming rates. Specifically, many species that were once abundant in their territory are now extinct, threatened or at risk.

They believe that precautionary measures are required with respect to all activities occurring within their territory, especially as these activities affect the air, land, water, and other resources.

7.2.1 Impacts on Air Quality

The Stó:lō expressed the concern that air quality impacts caused by the Power Plant would have an adverse effect on natural systems of flora and fauna in their territory. This concern extends to the environmental health of both the Stó:lō people and resources. They are concerned that the project would add to the smog problems that exist within their territory and that the particulate matter from the project would heighten and intensify high asthma and respiratory problems among Stó:lō elders and children.

The Stó:lō submitted that the effect of increased air pollution can alter the quality of the water, fish, agricultural and general environmental health of both the people and the land. They are concerned over the impact the project would cause to their fisheries and aquatic resources, which are the mainstay of their culture and economy.

On behalf of the Stó:lō, Mr. Malloway argued that the plume of particulates and poisons that would emanate from the operation of the Power Plant in Sumas would have destructive impacts on the air and water, undermining their access and right to these unadulterated resources. Such

negative effects would infringe on Stó:lō rights and title because they would interfere with the Stó:lō's ability to practice and maintain their cultural ways.

7.2.2 Impacts on Water

The Stó:lō expressed concern regarding the impacts that water usage by, and effluent discharge from, the Power Plant would have on their lands and fishery resources. With respect to water usage, they expressed concerns over the amount of water to be drawn from the Aquifer by SE2 during dry years when there is little rain or snow to keep the Aquifer constant. The Stó:lō submitted that this would affect runoff needed to feed streams and rivers and impact the fish, which may not be able to reach their spawning areas. Further, there was concern over the impacts that would result to fish and other aquatic life, if untreated effluent escapes from the SE2 Power Plant.

7.2.3 Other Impacts

Mr. Malloway said the Stó:lō understood that the project would create detrimental impacts upon the places and resources they rely on for food, their livelihood, their physical and spiritual health, and their cultural identity and general well-being as a Stó:lō community. He went on to say that the Stó:lō understood that SE2 would, beyond any acceptable measures, negatively affect the health of the Stó:lō community biologically, spiritually, environmentally, and culturally. It was in this regard that the Stó:lō believed the project would interfere with their ability to exercise their aboriginal rights within their territory.

7.2.4 Consultation

The Stó:lō acknowledged that SE2 had contacted them to discuss certain aspects of the IPL, including the IPL environmental assessment report and, more specifically, the archaeological impact assessment.

However, the Stó:lō also noted their 29 March 2000 letter to SE2, following the 24 March 2000 meeting, in which they expressed broader concerns about the environmental impacts of the project within their traditional territory. The Stó:lō submitted that these had not been adequately or meaningfully addressed by SE2. The Stó:lō pointed to the lack of consultation by the Crown and SE2 over the Power Plant and suggested that there had not been consideration of how the Stó:lō's inherent rights and title to their territory and resources could be protected and accommodated.

With respect to SE2's proposed TUS, the Stó:lō initially noted SE2's lack of contact and questioned how such a study could be conducted without the involvement of the potentially affected First Nations people. The Stó:lō Nation stated that it expected SE2 to seek the Stó:lō's active involvement in any such study.

The Stó:lō referenced a number of court decisions for various propositions in respect of aboriginal consultation. They submitted that consultation must substantially address aboriginal concerns and be adequate and meaningful. They stated that consultation is more than just a procedure to follow and requires active involvement to ensure accommodation that addresses and

respects aboriginal concern and interests. The Stó:lō suggested that consultation must extend beyond discussions about impacts on traditional use and archaeological sites and include negotiations on other broader aboriginal concerns. At the time the evidence was filed, the Stó:lō did not consider the contacts by SE2 to constitute adequate and meaningful consultation involving the Stó:lō government.

From the Stó:lō's perspective, and considering the magnitude of the project, they suggested that the absence of Crown consultation constitutes a breach of the Crown's fiduciary duty to the Stó:lō.

Finally, the Stó:lō submitted that they do not consider that the items provided in SE2's response to a Board information request constitute meaningful consultation. The record provided by SE2 indicates that only one in-person meeting, on 24 March 2000, had been held between representatives of the Stó:lō and SE2.

In his oral presentation on behalf of the Stó:lō Nation, then National Chief Matthew Coon Come submitted that the judgments of the courts had established a number of fundamental principles in relation to aboriginal people. For example, he submitted that aboriginal title cannot be ignored in any decisions regarding the use of or activities that will affect that title, be they undertaken by the Crown or by anyone else. Chief Coon Come submitted that First Nations' consent is required where such an undertaking will prejudice the enjoyment, exercise or retention by a First Nation of its aboriginal title, lands or resources. He also submitted that the Crown, including boards such as the NEB, and third parties are placed in a fiduciary position vis-à-vis First Nations and their titles, rights and interests in respect of which the Crown or third parties may be considering taking actions or causing infringements.

Chief Coon Come submitted that the project would significantly affect Stó:lō lands and resources, which are presently the subject matter of a formal treaty negotiating process.

Chief Coon Come also made specific reference to paragraph 168 of the *Delgamuukw v. British Columbia*⁴⁸ decision of the Supreme Court of Canada with respect to the Crown's duty to consult. The Court stated:

There is always a duty of consultation. Whether the aboriginal group has been consulted is relevant to determining whether the infringement of aboriginal title was justified... The nature and scope of the duty of consultation will vary with the circumstances. In occasional cases, when the breach is less serious or relatively minor, it will be no more than a duty to discuss important decisions that will be taken with respect to lands held pursuant to aboriginal title. Of course, even in these rare cases, when the minimum acceptable standard is consultation, this consultation must be in good faith, and with the intention of substantially addressing the concerns of the aboriginal peoples whose lands are at issue. In most cases it will be significantly deeper than mere consultations. Some cases may even require the full consent of an aboriginal nation, particularly when

48 [1997] 3 S.C.R. 1010 at 1113.

provinces enact hunting and fishing regulations in relation to aboriginal lands.

In final argument, Mr. Malloway also referred to the *Delgamuukw*⁴⁹ decision as recognizing the continued existence of aboriginal title. He argued that SE2 has given little consideration to Stó:lō inherent rights and title and a great deal more work is required on behalf of SE2 to "acknowledge and accommodate our interest" should the project be granted approval.

Mr. Malloway submitted that the Stó:lō's two main environmental concerns are maintaining clean air and fresh water and that these are imperative as a mainstay of their culture.

7.3 Position of Dr. Rose Charlie, Grand Chief Chehalis First Nation

Dr. Charlie submitted that there has been no First Nations consultation, either by the Crown or the Board. She argued that the Board is part of the government and that government decisions cannot infringe on aboriginal rights. She added that the Board has obligations to Canadian First Nations people under both the CEA Act and the NEB Act.

She cited s. 35 of the *Constitution Act, 1982*,⁵⁰ as recognizing and affirming existing aboriginal and treaty rights, and requested that the Board consider the entire environmental effects from both the IPL and Power Plant on the Stó:lō territory and consult with First Nations.

7.4 Response of SE2

In its Reply Argument, SE2 noted that the Board's Environmental Effects Motion ruling of 9 December 2002 stated that:

...if the Stó:lō Nation wishes to raise this issue [Crown consultation] in the course of the proceedings to consider SE2's IPL application, the Board would expect that they would provide evidence of the nature of the rights which they assert and the potential infringement of those rights which may result from any approval of the project.

SE2 submitted that, as aboriginal rights and title are fact-, site- and tribe-specific, there is an onus on First Nations asserting a potential infringement to provide specific information.

SE2 stated that it had taken steps to engage in a process of consultation with the Stó:lō Nation. It had sent letters and other materials to the Stó:lō Nation and provided them with information, arranged a meeting with them and attempted to arrange other meetings, and offered to make SE2's experts available to them.

SE2 submitted that, based on evidence submitted in the hearing by SE2, which is not contradicted by any evidence from the Stó:lō Nation or any other intervenor, the project will not significantly infringe or adversely affect:

49 *Ibid.*

50 *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (U.K.), 1982, c. 11.

- fishing, hunting or resource gathering in the Stó:lō Nation's traditional territory (or outside such territory);
- health, air quality or water quality among the Stó:lō Nation or among other Canadians; and
- the economic interest of the Stó:lō Nation and lands which may become their aboriginal title lands.

SE2 argued that the comments of the Stó:lō Nation respecting the project can be considered as either general in character, based on the entitlement of all citizens of Canada to have their concerns considered in the environmental review process, or aboriginal in character, based on a potential infringement of potential aboriginal rights and title.

SE2 submitted that, to the extent that the comments of the Stó:lō Nation are made on the same basis as the comments of other residents of the Lower Fraser Valley, the whole of the SE2 evidence and submissions are answers to such comments.

With regard to aboriginal-specific issues, rights and title, SE2 accepted that the Stó:lō Nation may have unextinguished claims of aboriginal title and unextinguished aboriginal rights within the Stó:lō Nation traditional territory, including aboriginal rights to hunt, fish and gather resources, but submitted that those rights would not be significantly or materially affected by the project.

SE2 further submitted that an interest in a certain quality of air or water is not an activity or a custom, practice or tradition within the Supreme Court of Canada's description of aboriginal rights, but is instead a concern or value that aboriginal people share on a like footing with all Canadians. SE2 relied on the judgment of the Supreme Court of Canada in *R.v. Van der Peet*⁵¹ in support of the proposition that clean air or clean water is not truly distinctive of an aboriginal society and, therefore, it would not qualify as an aboriginal right as defined by the Court in *Van der Peet*.

SE2 submitted that it did not accept that the Stó:lō Nation had raised a reasonable possibility that the project would infringe either their aboriginal title or any specific aboriginal rights activity. Therefore, SE2 submitted that the Stó:lō Nation does not have a constitutional right to a process of consultation in relation to the project separate from the hearing before the Board.

Alternatively, SE2 argued that if any such separate right to be consulted exists, then it will have been satisfied by the efforts that SE2 is making with the Stó:lō Nation to discuss and consider the project. SE2 submitted that it is prepared to continue discussions with the Stó:lō Nation with respect to its concerns and interests. Further, SE2 stated that it has made and continues to make efforts to collect, share and discuss information relating to the project with the Stó:lō Nation and to consider any measure or accommodation that the Stó:lō Nation may consider reasonably appropriate. In addition, SE2 intends to file a report to the Board on this process, which would consist primarily of correspondence between the parties.

51 [1996] 2 S.C.R. 507.

SE2 also submitted that the foregoing comments applied to the submissions of Dr. Rose Charlie of the Chehalis First Nation.

Views of the Board

The aboriginal groups submitted that the Board must act in a fiduciary capacity to aboriginals in its decision-making capacity. The National Energy Board's Memorandum of Guidance on Consultation with Aboriginal Peoples, dated 4 March 2002 (MOG), states:

...imposing on the Board a fiduciary duty towards Aboriginal peoples as part of its decision-making process is inconsistent with its function as an independent quasi-judicial tribunal.

The Board has considered the arguments by parties to the effect that it must act in a fiduciary capacity in respect of aboriginal people, but does not share this view. As noted in the MOG, such a fiduciary role would not be consistent with the Board's statutory role as an independent quasi-judicial tribunal. Like a court, the Board must be objective and impartial and base its decisions on the evidence before it. It would be inconsistent with this role for the Board to act in a fiduciary role towards one of the parties appearing before it. At the same time, the Board acknowledges that it must carefully consider the concerns of aboriginal groups that may be affected by a particular project. To this end, the Board requires that applicants contact aboriginal groups in the project area early on in order to ensure that the groups are aware of the project. The Board expects an applicant to endeavour to meet the concerns expressed by aboriginals to the extent possible and to provide the Board with evidence of its efforts and of any Crown consultation that has occurred. Where an aboriginal group still has concerns, as was the case with this application, the Board ensures that its process is made as clear as possible and that aboriginal groups are given full opportunity to participate in the process or to otherwise make their views known to the Board. This ensures that the Board can take those views into consideration in its decision-making.

As a result of discussions with SE2 beginning in 1999 and continuing up to the hearing, the aboriginal groups who may have an interest in the SE2 application have had a chance to discuss the application with SE2, have been provided information on the Board's hearing process in a timely manner and have been given a full opportunity to provide their views to the Board in a variety of ways, including full participation in the oral hearing. All of the evidence considered by the Board is on the public record and is open and transparent to all interested parties. Aboriginal groups have made their views on this application known to the Board through the filing of written evidence, provision of oral presentations, questioning witnesses and final argument. The Board is of the view that

this process has provided an open, transparent and accessible forum for aboriginal groups to bring forward their issues and concerns related to the SE2 application for serious consideration by the Board. The Board has taken the concerns expressed by aboriginal groups into consideration in reaching its regulatory decision.

The Stó:lō expressed general concerns about the potential environmental effects of the Power Plant on air quality, water quality and aquatic resources in their traditional territory and the health of the Stó:lō community. Most of these concerns were similar in nature to the concerns raised by the non-aboriginal intervenors and were not raised in respect of a specific aboriginal right or use of land for traditional purposes. The Stó:lō expressed particular concern that the Power Plant would negatively impact the salmon fishery of the Fraser River, which they asserted is a mainstay of their culture and economy. The Stó:lō submitted that the negative effects of the Power Plant would infringe on Stó:lō rights and title because they would interfere with the ability of the Stó:lō to practise and maintain their cultural ways.

The Board heard extensive evidence regarding environmental effects of the IPL and the Power Plant. SE2 completed an environmental assessment that was subject to questioning and examination by the Board and many intervenors. In addition, the parties who opposed the application filed a great deal of evidence on potential environmental effects of the Power Plant. Moreover, the Board heard from technical and environmental experts who testified during the hearing, both in support of and in opposition to the project. These experts were available for questioning by all parties during the course of the hearing. In the Board's view, it has before it an extremely comprehensive record regarding all potential environmental effects in Canada of both the IPL and the Power Plant. The Board's conclusion as to the environmental effects of the IPL is contained in the ESR.

The aboriginal rights asserted by the aboriginal groups in this proceeding have not yet been legally proven. Where aboriginal rights are asserted but have not been legally established, a decision-maker cannot know for certain whether its decision will result in an infringement of those unproven rights. There was no specific evidence filed in this proceeding on the precise nature and scope of the aboriginal rights claimed by the Stó:lō. Accordingly, there is uncertainty about the existence, scope and content of the claimed rights. The Board notes that the Supreme Court of Canada has not yet considered whether the Crown has a duty to consult where aboriginal rights have not been legally established or proven. The Stó:lō referred to *Taku River Tlingit First Nation v. Tulsequah Chief Mine*

*Project*⁵² and *Haida Nation v. British Columbia (Minister of Forests)*⁵³ as standing for the proposition that the Crown has a duty to consult with aboriginal people about potential infringements of aboriginal or treaty rights before those rights have been legally established. While these are significant decisions, they are not binding on this Board. Further, the Board is aware that both of these cases are currently under appeal to the Supreme Court of Canada.

Although the asserted aboriginal rights have not been legally proven or established, for the purposes of this decision the Board has assumed that the Stó:lō have an aboriginal right to fish in the Fraser River and that the Board's decision could potentially have an impact on that right.

In Chapter 6 of these Reasons, the Board has discussed the effects of the Power Plant in Canada. In relation to wastewater discharge, the Board noted that the testing indicated that the chemicals present in the wastewater do not pose an environmental hazard. Upon considering the evidence on the treatment of the wastewater at the JAMES Treatment Plant, the Board has concluded that negative environmental effects within the Fraser River would likely be negligible. The Board has also considered the impacts of withdrawal of groundwater from the Aquifer (see Chapter 6 of these Reasons) on water quantity in private wells and springs in Canada. The evidence indicates that such impacts would be small and SE2 has committed to monitor and respond to any such effects. As a result the Board is of the view that any aboriginal right that the Stó:lō may have in respect of fishing in their traditional territory would not likely be affected by the Power Plant.

With regard to the concerns raised by the Stó:lō in respect of air quality and health, the Board notes that these concerns were raised generally rather than on a site-specific basis. Concern for air quality, human health and the need for clean air and water are true of every human society. It does not appear to the Board that the Stó:lō's concerns relate to practices, customs or traditions that are distinctive features of the Stó:lō's aboriginal society.

It is important to note that, while the Board has considered the environmental effects of the Power Plant in Canada, its regulatory decision is whether to issue a Certificate for the IPL. The Power Plant is under the jurisdiction of the U.S. authorities and has received regulatory approval in that country. The Stó:lō and other aboriginal groups did not file any evidence or make any submissions on how the IPL, which is the subject of the Board's decision, would affect any of their aboriginal rights. This is perhaps not surprising given the location of the proposed IPL on

52 (2002), 98 B.C.L.R. (3d) 16 (B.C.C.A.).

53 [2002] 10 W.W.R. 587 (B.C.C.A.).

existing RoWs through the centre of the City of Abbotsford. Given the level of urbanization in this area, it is unlikely, in the Board's view, that the IPL would have an impact on any aboriginal rights. In particular, the IPL would not have any impact on a potential right to fish for salmon in the Fraser River.

The Board therefore concludes that the IPL would not infringe any of the asserted aboriginal rights.

Chapter 8

Public Convenience and Necessity

Views of the Board

8.1 The Public Interest

As noted in Chapter 2 of these Reasons for Decision, the Board has described the public interest in the following terms:⁵⁴

The public interest is inclusive of all Canadians and refers to a balance of economic, environmental, and social interests that changes as society's values and preferences evolve over time. As a regulator, the Board must estimate the overall public good a project may create and its potential negative aspects, weigh its various impacts, and make a decision.

When applying the “public convenience and necessity” test in the NEB Act, the Board makes a determination of the overall “public interest”.

It must be re-emphasized that what is in the public interest or in the public convenience and necessity may vary with the specific application, the location of the project, the commodity involved, the various segments of the public affected by the decision and the purpose of the applicable sections of the NEB Act. In addition, what is in the public interest or in the public convenience and necessity may vary over time; these are not static concepts.

Essentially, in its consideration of an application, the Board is required to identify and weigh all relevant evidence on the record and come to a determination whether, overall, the project is in the public interest or in the public convenience and necessity. This requires the Board to balance the benefits and the burdens of the IPL. This balancing is rarely an easy task; there are typically both benefits and burdens associated with each application before the Board. It requires that the Board apply its reasoned judgment, based upon a considered analysis of the evidence properly before the Board, to come to its final determination.

Throughout the EH-1-2000 proceeding, and in particular during final argument, SE2 implied that once it could be shown that the IPL and the Power Plant would comply with all regulatory requirements, standards, objectives or guidelines - be they with respect to safety (e.g., CSA standards), environment (e.g., noise bylaws, B.C. and Canadian Air Quality Objectives and Standards), or otherwise (e.g., EFSEC requirements) - the IPL should be approved. For example, SE2 argued that it would be inappropriate for the Board to second-guess air quality standards and objectives, because these standards and objectives had been designed by federal and provincial

54 See the Board's Internet site at http://www.neb-one.gc.ca/PublicInterestFootnote_e.htm

bodies through extensive processes and were determined, as a matter of public policy, to constitute an “acceptable risk”. The implication of this argument is that the Board, once provided with evidence that the IPL and the Power Plant would comply with these standards and objectives, should not further weigh the related benefits and burdens of the IPL’s and Power Plant’s effects.

If this proposition were accepted, the role of the Board would be reduced to determining only whether a project would meet applicable regulatory requirements, standards, objectives or guidelines. There would be no room for the application of reasoned judgement, opinion or administrative discretion. Such a position is not supported by the wording of the relevant section of the NEB Act, the court decisions with respect to the interpretation of the terms “public interest” and “public convenience and necessity”, or the Board’s past comments on these terms. Inherent in the concept of balancing benefits and burdens is the recognition that something more is required than simply reviewing the evidence to determine if a project would meet the minimum regulatory requirements, standards, objectives or guidelines.

While evidence of expected compliance with regulatory requirements, standards, objectives and guidelines is relevant to the Board’s final determination on whether a project is in the public convenience and necessity, this evidence is only one factor in the Board’s consideration of the total benefits and burdens of a project. Notwithstanding that a project would comply with regulatory requirements, standards, objectives and guidelines, the Board must fulfill its statutory responsibility to weigh all the benefits and burdens associated with a project and make a determination of the overall public interest.

The Board further notes that regulatory requirements, standards, objectives and guidelines are generally developed by other governmental bodies. In developing such instruments, these bodies have determined what is, in their view, an “acceptable risk” for the public; that is, there is an implicit recognition that even when there is compliance with the regulatory requirements, standards, objectives or guidelines, some risks still remain. In the Board’s view, such risks potentially constitute burdens, which must be considered in the Board’s overall assessment of the benefits and burdens of a project.

With respect to the Board’s consideration of the benefits and burdens of the IPL under the NEB Act, the Board notes that its conclusion, under the CEA Act, that the IPL would not be likely to cause significant adverse environmental effects, does not imply that there would be no adverse environmental effects associated with the IPL. There still may be some adverse environmental effects that should be considered in identifying, weighing and balancing the overall benefits and burdens of the IPL under the NEB Act. The Board must balance the totality of benefits against the totality of burdens to come to its final determination.

This Chapter provides the Board’s assessment of the overall benefits and burdens of the IPL. Although the application before the Board is for the IPL alone, the IPL, as previously found by the Board, is needed only if the Power Plant is constructed. As a result, the Power Plant and the IPL can be seen as constituting a single project, the benefits and burdens of which in Canada must be assessed to determine if the IPL is in the Canadian public interest.

8.2 Benefits of the Project

SE2 outlined several direct and indirect benefits that the IPL, as well as the Power Plant, would provide. A number of these were economic in nature and were considered in detail by the Board in Chapter 5 of these Reasons. Other benefits were identified by the Board in its Environmental Screening Report (ESR) and in other chapters of these Reasons for Decision. The Board's findings with respect to the benefits of the IPL and Power Plant are summarized below for ease of reference. The Board has determined that the following are benefits in Canada that could result from the IPL and the Power Plant, if the IPL were to be approved.

8.2.1 Benefits Relating to Market Structure Impacts

First, the close proximity of the Power Plant to the Lower Mainland BC Hydro grid could be advantageous to BC Hydro if it required imported power, could assist in minimizing the costs of upgrading transmission lines, and could help avoid transmission losses and infrastructure costs.

Second, the addition of electric power from the Power Plant could improve the reliability of the regional power system and help to improve the overall functioning of a competitive market for electric power in the region.

Nonetheless, as previously stated in Chapter 5, while these benefits could accrue, on the evidence before the Board, there are no existing significant reliability or market issues in the SE2 market region to make the capture of these potential benefits imperative. Indeed, the Board notes its earlier conclusion in Chapter 5 that the evidence concerning the need for the Power Plant to meet electricity demand in Canada was not compelling. Further, the effects of the addition of SE2's power to the region would be marginal, as SE2 would be a relatively small generator. With many similar generators staged for market entry in the same time frame as the Power Plant's planned entry, the impact of a single generation facility on both reliability and the overall functioning of a competitive market would be minimal.

8.2.2 Direct Benefits to Canadians

There would be a benefit associated with the payment of transmission charges to BC Hydro; however, the amount of this payment is questionable. The value of the transmission charges SE2 provided represents the maximum potential benefit from this source; it is possible that transmission charges could be reduced or even eliminated.

SE2 provided other calculated benefits amounts, although there is some question of the accuracy of those amounts; for example, the cost of the turbines. In addition, not all components necessary for the IPL, such as the XLPE cable and underground works, would originate with Canadian manufacturers or suppliers. Accordingly, the Board is of the view that the direct benefits to Canadians would not be as large as SE2 stated in its evidence.

As indicated in Chapter 5, the direct benefits to Canadians largely consist of compensation for goods and services that would be acquired for the construction and maintenance of the IPL or, in the case of the CPR, compensation for use of the RoW. There are no significant value-added benefits, such as permanent jobs, that would accrue to Canadians as a direct result of the IPL.

In general, the direct benefits in Canada cited by SE2 are not specific to SE2, as in the case of natural gas, or are uncertain. The Board further notes that the value of those benefits that are certain and specific to SE2's IPL and Power Plant, when considered over the 30-year anticipated life time of the IPL, would be minimal.

8.2.3 Indirect Benefits

By virtue of the Power Plant being a new state-of-the-art facility, which could be less costly to operate and would burn fuel more cleanly than some older facilities in the region, and by virtue of its location, SE2 power could displace the power from older fossil fuel-fired power generation facilities in the region, thereby reducing the aggregate cost of producing electricity and reducing aggregate emissions in the region. This, in turn, could moderate power price increases and other costs associated with higher levels of air pollution.

However, an older plant may be able to offer power at a lower price than a new plant, since most of its capital costs may already have been recovered. Further, if SE2's market analysis proves to be accurate and demand for electricity in the region grows significantly over the years to 2025, it is possible that all existing plants would be required to meet growing demand, in which case the Power Plant would supply incremental rather than replacement power, and would not assist in the retirement of older plants.

Accordingly, as previously found by the Board, the identified indirect benefits are speculative; a number of circumstances, beyond the control of SE2, would have to occur before the benefits were realized.

8.2.4 Other Benefits Associated with the IPL or Power Plant

There could be some benefits associated solely with the IPL, such as the replacement of excavated soil with clean imported backfill for the underground portion of the IPL, and the removal and disposal of any contaminated soils encountered. In addition, there could be a small net benefit in fisheries habitat as a result of habitat compensation in the area of the proposed upper Willband Creek crossing.

An additional non-economic benefit associated with the Power Plant was identified in Chapter 6 of these Reasons for Decision; that is, the fill and the pad required for the Power Plant could have the effect of reducing negative flood effects in Canada during large flood events.

However, these benefits are, in the Board's view, minuscule, would benefit only a small portion of the public, or are speculative. Accordingly, the Board does not attribute much weight to these benefits.

8.3 Burdens of the Project

A number of burdens in Canada are associated with both the IPL and Power Plant. Conditions may go some way to mitigate many of these burdens. Therefore, in its assessment of the IPL, the Board has identified and weighed the burdens of construction and operation of the IPL and Power Plant that would remain after compliance with any conditions.

These residual burdens include uncertainties associated with the construction and operation of the IPL and Power Plant. Where uncertainties exist, there are risks, which should be considered in the Board's identification of the benefits and burdens of the IPL. As with the weighing of benefits, the level of uncertainty associated with these risks has been considered by the Board in terms of the weight these burdens have been given in its final balancing of the benefits and burdens of the IPL.

The Board's discussion and findings on the burdens in Canada associated with the IPL and the Power Plant in earlier chapters of these Reasons for Decision and in the ESR are summarized below for ease of reference.

8.3.1 Environmental Burdens

As is evident from the previous chapters in these Reasons and the ESR, the vast majority of the burdens associated with the IPL and the Power Plant would be environmental in nature.

Again, notwithstanding the Board's CEA Act conclusion in the ESR, the adverse environmental effects of the IPL must still be considered in weighing the overall benefits and burdens of the IPL under the NEB Act. The Board recognizes that, in general, the environmental burdens associated with the IPL itself would be relatively minor. This has been taken into account by the Board in assessing the weight such burdens should be accorded.

First, there are burdens associated with the construction of the IPL, which can be characterized as a general disruption to the community during the relatively short construction phase. These include vehicle emissions and noise from the construction vehicles and workers along the RoW; temporary disturbance of soils and site-clearing on portions of the RoW in order to install the underground portion of the IPL, the pilings for the Willband Creek crossing and the footings for the above-ground portions of the IPL; required crossings of various existing infrastructure and the short-lived potential for safety concerns and inconvenience while carrying out such crossings; interim loss of vegetation along the RoW until the revegetation and restoration of the disturbed sites have been completed; and potential disturbance to wildlife habitat during the construction period.

Second, there are burdens associated with the maintenance and operation of the IPL. These include the potential for bird strikes with the IPL, the nominal and infrequent increase in noise from the IPL during foul weather periods, the emission of EMFs during the operation of the IPL, which could affect the CPR's operations, and the subjective effect of the IPL on visual aesthetics in the area.

In addition to the environmental burdens of the IPL itself, there are environmental burdens in Canada that would arise directly from the operation of the Power Plant. The Board's detailed discussion of these burdens is contained in Chapter 6 of these Reasons. They include the addition of emissions and pollutants into the Lower Fraser Valley airshed, the potential for these emissions and pollutants to be an additional stressor on the health of vulnerable individuals, and a small potential for the withdrawal of water from the Aquifer to affect water quantity in private wells and springs in Canada.

8.3.2 Other Burdens Associated with the Power Plant

The operation of the Power Plant and the effect of the addition of the pollutants from the Power Plant into the Lower Fraser Valley airshed would also create burdens in Canada when the local and regional goals with respect to air quality are considered. The record before the Board establishes that the local and regional bodies and the citizens of the Lower Fraser Valley have taken measures to address their air quality concerns (*e.g.*, the Air Care Program). Furthermore, the Board acknowledges that the airshed has a limited capacity to accommodate additional pollutants without negative effects, and that there are increasing costs of mitigative measures to reduce such negative effects, since further improvements in air quality will require more expensive or aggressive programs. The addition of pollutants from the Power Plant into this airshed would be counter-productive to local and regional goals to address air quality concerns and would undermine the effectiveness of the efforts that have already been undertaken. In the Board's view, these effects are serious burdens that must be considered, notwithstanding that the maximum concentrations of pollutants from the Power Plant, in combination with background levels, would meet both the B.C. and Canadian Air Quality Objectives and Standards for these pollutants.

In reaching this conclusion, the Board is mindful of the offset programs proposed by SE2, particularly for NO_x and PM emissions; however, the Board is of the view that there is considerable uncertainty as to whether the potential benefits associated with these programs could be realized, particularly within the local airshed. For such benefits to be realized, there would need to be both sufficient sources to be offset and co-operation from those responsible for these sources. The evidence does not indicate that these conditions currently exist, or are likely to exist in the immediate future.

8.4 The Balance of Benefits and Burdens

The Board's analysis of the benefits of the IPL and the Power Plant lead to the conclusion that the benefits accruing to Canadians from the IPL and Power Plant are, for the most part, insubstantial or diffuse. As the Board has previously found in Chapter 5, some of the submitted economic benefits are speculative, some are minimal in nature when one considers the time frame of the IPL, some are inflated, and some cannot be tied to SE2 specifically. Some of the other benefits noted by the Board above, such as the replacement of excavated soil with clean imported backfill, the removal of any contaminated soils, the net benefit in fisheries habitat, and the potential reduction of negative flood effects, are inconsequential.

The Board is of the view that the benefits of the IPL and Power Plant, even if they were all realized, would not be substantial benefits to Canadians, or to the local and regional communities.

Turning now to the burdens in Canada associated with the IPL and Power Plant, the Board is of the view that, as is evident from the discussion above, the burdens are many and real. Most would be borne almost entirely by the local and regional communities, whereas the benefits resulting from the IPL and Power Plant would be either external to these communities, or, where specific to the communities, would be negligible in value.

As discussed in Chapter 2 of these Reasons, as a federal tribunal, the Board must focus on the overall Canadian, or national, public interest. Various decisions of the courts have established that a specific individual's or locale's interest is to be weighed against the greater public interest, and if a project is in the greater public interest, the specific interests must give way. However, in this situation, where the benefits of the proposed IPL and associated facilities are not substantially in the greater Canadian public interest, the specific locale's interest has more weight than would otherwise be the case. Overwhelming community opposition to the IPL and Power Plant, while not determinative, is not irrelevant. This is particularly so in this proceeding, where there is an absence of support for the IPL and Power Plant from industry, commercial interests, elected officials, governments or other community representatives, whether national, local or otherwise; no compelling evidence of significant benefits of the IPL and Power Plant to the Canadian public interest generally; and where the burdens of the IPL and Power Plant would be borne almost exclusively by these local and regional communities. Though also not determinative, the Board notes that no party to this proceeding, other than SE2, submitted evidence or argument that any aspect of either the IPL or the Power Plant would be in the Canadian public interest.

After considering all of the evidence, taking into account all relevant factors, and identifying and weighing the benefits and burdens in Canada of the IPL and Power Plant, the Board has concluded that, on balance, the burdens of the IPL outweigh the benefits. As a result, the Board is unable to come to the conclusion that the IPL is in the Canadian public interest and is and will be required for the present and future public convenience and necessity.

8.5 Role of Intervenorors

The Board is committed to ensuring that stakeholders are engaged effectively in the Board's public processes.⁵⁵ One aspect of this commitment is to have effective public participation in oral hearings before the Board.

In this proceeding, there was an unprecedented level of participation by intervenors, many of whom, though unpaid and unrepresented by counsel, were well-prepared and knowledgeable about the issues to be considered at the hearing. The Board made frequent attempts to provide procedural guidance to intervenors with respect to effective participation in the Board's process, and it was clear that many intervenors took advantage of this guidance. However, despite this guidance, some intervenors continued to rely heavily on uninformed impressions and speculation, rather than attempting to provide the Board with proper evidence on which it could rely in making its decision. Such impressions and speculation are of no assistance to the Board in fulfilling its mandate.

The public is entitled and encouraged to participate in the Board's processes; however, such participation carries with it a responsibility. That responsibility is to attempt to participate in an

⁵⁵ The Board has developed five corporate goals to help it meet the challenges it faces in a dynamic energy market and ever-changing regulatory landscape. The NEB's Goal 4 states as follows: "The NEB fulfills its mandate with the benefit of effective public engagement." Effective public engagement is a key component in making certain that the rights of persons affected by the Board's decisions are protected, as it ensures that the Board has all of the relevant evidence it requires prior to making a decision and, consequently, that the principles of natural justice and fairness are met. As a result, effective public engagement also allows the Board to meet another of its Goals, "NEB-regulated facilities are built and operated in a manner that protects the environment and respects the rights of those affected."

effective manner, by following the procedures of the Board, being knowledgeable about the issues in the proceeding, providing relevant evidence for the Board's consideration, and, even in the face of disagreement with the position that a party advocates, showing courtesy and respect to all parties involved in the process, as well as the Board and its staff.

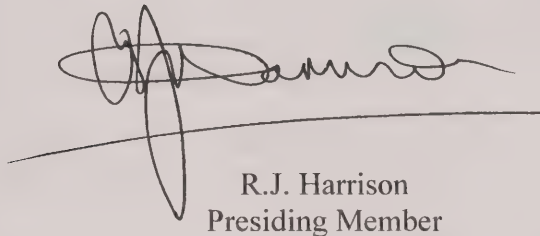
In the Board's view, the effectiveness of an intervenor's participation can be greatly undermined when that intervenor exhibits discourteous and disrespectful behaviour. Unfortunately, in this proceeding there were a few intervenors who did not attain the level of decorum and civility the Board expects to see from parties appearing in proceedings before it, evincing a clear lack of respect for the Board and its processes. This was particularly true of some of the comments received by the Board with respect to the ESR, a number of which included vulgarities and personal attacks on the ethical values, integrity and morality of other parties, and of the Board.

It bears repeating that SE2 was legally entitled to apply to the Board for a Certificate for the IPL, even in the face of substantial opposition. SE2 had a legal right to a full and fair hearing before the Board, and a decision by the Board based on the facts and evidence presented at such a hearing, in accordance with the statutory requirement on the Board to determine whether the IPL is and will be in the present and future public convenience and necessity. Further, unless there is proper evidence demonstrating otherwise, each party is presumed to be acting in good faith in the presentation of its evidence and with respect to the commitments it makes during the course of a proceeding. Baseless accusations of immorality and unethical conduct on the part of SE2, its counsel and its witnesses, for simply submitting its application and evidence to the Board for consideration, are not acceptable.


Chapter 9

Disposition


This and the foregoing chapters constitute the Board's Reasons for Decision in respect of the application heard by the Board in the EH-1-2000 proceeding. The Board is not satisfied that the IPL is and will be required for the present and future public convenience and necessity. Accordingly, for all of the reasons stated in this and the above chapters in these Reasons for Decision, the Board denies SE2's application for the IPL.



R.J. Harrison
Presiding Member



D.W. Emes
Member



C.L. Dybwad
Member

Calgary, Alberta
February 2004

Appendix I

Glossary

$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter, a unit of measurement.
37/0	Ratio of aluminum strands to steel strands of AAC or ACSR conductor; second value (“/xx”) in the ratio is 0 in AAC type conductor.
AAC	All-Aluminum Conductor; a type of conductor, of all-aluminum design and material, used to construct power lines.
ACSR	Aluminum Conductor Steel Reinforced; a type of conductor, of combined aluminum and steel design and material, used to construct power lines.
Avulsion	A changing of flow path of a stream or river from its original flow path (<i>e.g.</i> , during flood events).
Bioassay	Analysis of the potential toxicity of a chemical by testing its effect on living organisms (<i>e.g.</i> , fish).
Combined Cycle	An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. This process increases the efficiency of the electric generating unit.
dB	Decibel, a unit for measuring the relative loudness of sounds.
dBA	Decibels measured on an A-weighted scale which means the sound level as measured on a sound level meter using a setting that emphasizes the middle frequency components similar to the frequency response of the human ear.
ESR	Environmental Screening Report completed under the CEA Act.
Externalities	Costs that are not internalized in the stated cost of a project.
Federal Energy Regulatory Commission (FERC)	A quasi-independent regulatory agency within the U.S. Department of Energy having jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification.

FERC Order 888	In April 1996, the FERC approved comprehensive rules in Order 888 which implemented nondiscriminatory, open access to transmission service for all wholesale suppliers.
FSEIS	EFSEC Final Supplemental Environmental Impact Statement dated May 2002.
Gains from trade	The extra production and consumption benefits that countries can achieve through international trade.
Glaciofluvial	Referring to the processes and the landforms related to the action of glacial meltwater.
Government Intervenors	Province of B.C., City of Abbotsford, and the Fraser Valley Regional District.
Grid	Common electrical power industry term for the interconnected high-voltage power line transmission network.
Heat Rate	A measure of the thermal efficiency achieved by a power station.
Hz	Hertz, a unit of frequency equal to one cycle per second.
Interconnection	The facilities that connect two systems.
JAMES Treatment Plant	Joint Abbotsford Mission Environment System sewage and industrial wastewater treatment and disposal plant.
Kilowatt (kW)	One thousand watts; the commercial unit of measurement of electric power. A kilowatt is the flow of electricity required to light ten 100-watt light bulbs.
Kilowatt-hour (kWh)	One thousand watts used for a period of one hour; the basic unit of measurement of electric energy.
Load	The amount of electric power delivered or required at any specific point or points on a system. The requirement originates at the energy-consuming equipment of the consumers.
MCM	Thousands (M) of circular mils; electric industry term used to quantitatively describe the cumulative effective cross-sectional area of an electrical conductor; also known and referred to in the industry as “kcmils”
Megawatt (MW)	One million watts. A unit commonly used to measure both the capacity of generating stations and the rate at which energy can be delivered.

Megawatt-hour (MWh)	One million watt-hours.
Merchant Plant	An electric generator not owned and operated by an electric utility and that sells its output to wholesale or retail customers.
Open Access	A regulatory mandate to allow others to use a utility's transmission and distribution facilities to move bulk power from one point to another on a nondiscriminatory basis for a cost-based fee.
Opportunity cost	The cost of using resources for a certain purpose, measured by the benefit or revenues given up by not using them in their best alternative use.
Phase Conductor(s)	Term referring to conductor(s) configured and operated as one phase of a standard three-phase AC power line or circuit; also referred to as "Phase Wiring".
Power Smart	BC Hydro's demand-side management program to encourage energy efficiency by its customers.
PowerEx Corporation	BC Hydro's marketing subsidiary.
PSD Permit	EFSEC Final Approval of the Prevention of Significant Deterioration and Notice of Construction No. EFSEC/2001-02SE2.
Radial line	Power Line between two points on the grid that does not produce a further network interconnection point on the grid.
Regional Transmission Organization (RTO)	An organization that is independent from all generation and power marketing interests and has exclusive responsibility for electric transmission grid operations, short-term electric reliability and transmission services within a multi-state region.
Reliability	A measure of the ability of the system to continue operation while some lines or generators are out of service. Reliability deals with the performance of the system under stress.
Spark spread	The difference between the market price of electricity and its cost of production.
Spot market	A real-time commodity market for instant sale and delivery of energy. Spot markets exist for electricity, where the time scale can be as small as a few minutes.

Thermal efficiency	A measure of the efficiency of converting a fuel to energy and useful work.
Transmission constraints	Limitations on a transmission line or element that may be reached during normal or contingency system operations.
Transmission grid	A system of interconnected generating facilities, transmission corridors and power lines that provide energy to a group of customers. Typically "grid" refers only to the high-voltage transmission network that transports large volumes of energy from production facilities to urban areas, industrial sites and end-use customers.
Transmission losses	Reduction in power and energy as resistance converts electricity to heat in transmission lines.
Unbundling	The separating of the total process of electric power service from generation to metering into its component parts for the purpose of separate pricing or service offerings.
Value added	The enhancement added to a product or service by a company before the product is offered to customers.
Wheeling	The transmission of power belonging to one utility through another utility's transmission grid.
XLPE	Electrical industry descriptive term for power cable made using cross[X]-linked polyethylene.

Appendix II

Conditions

A: General

- A1. The 230 kV International Power Line to be constructed and operated pursuant to this Certificate (the IPL) shall be owned and operated by Sumas Energy 2, Inc. (SE2).
- A2. Unless the Board otherwise directs, SE2 shall not sell, convey or lease to any person the IPL, in whole or in part.
- A3. Unless the Board otherwise directs, the IPL shall not transmit power into Canada at a rate greater than a nominal 660 MW.
- A4. Unless the Board otherwise directs, the IPL shall not transmit electricity generated from any source other than the SE2 Power Plant located in Sumas Washington approved by EFSEC Order 768 dated 24 May 2002 (the Power Plant).
- A5. It is a term of this Certificate that the Power Plant is constructed and operated in accordance with the unamended EFSEC Order 768 dated 24 May 2002 (the Order) and the unamended Site Certification Agreement dated 23 August 2002 between the State of Washington and SE2 (the SCA), and in a manner such that the emissions from the operation of the Power Plant do not vary in kind or degree from the proposed emissions referred to in SE2's application or as otherwise adduced in its evidence in the EH-1-2000 proceedings.

Should any of the following change events occur:

- a) an application is made to modify or amend the Order, the SCA or the EFSEC Final Approval of the Prevention of Significant Deterioration and Notice of Construction No. EFSEC/2001-02SE2 (PSD Permit);
- b) the actual construction or operation of the Power Plant varies from that set out in the order, the SCA or the PSD Permit;
- c) the emissions from the operation of the Power Plant vary in kind or degree from the proposed emissions referred to in SE2's application or as otherwise adduced in its evidence in the EH-1-2000 proceedings; or
- d) the owner of the Power Plant would be a different entity than the owner of the IPL,

SE2 shall forthwith file with the Board:

- i) a notification of the change event including all relevant particulars;

- ii) an analysis of the effect of the change event on SE2's assessment in the EH-1-2000 proceedings of the possible environmental effects in Canada of the construction and operation of the Power Plant; and
- iii) its views on whether the information provided is of sufficient relevance that the Board should initiate a procedure to consider the review or revocation of this Certificate.

- A6.** Unless the Board otherwise directs, SE2 shall cause the IPL to be designed, manufactured, located, constructed, installed and operated in accordance with those specifications, drawings, and other information or undertakings set forth in its application or as otherwise adduced in its evidence before the Board in the EH-1-2000 proceedings, subject to such modifications and other requirements that may be required to mitigate risks to human health and safety as identified either in the Electromagnetic Compatibility Study or in the course of adhering to requirements specified in the Operations and Maintenance Manual (O&M Manual).
- A7.** SE2 shall design and construct the IPL to comply with the most current versions of the CAN/CSA C22.3 standard for Electrical Coordination and IEEE Standard 80 for AC Substation Grounding. SE2 shall design and construct the overhead portion of the IPL to comply with the most current version of the CAN/CSA C22.3 standard for Overhead Systems and shall design and construct the underground portion of the IPL to comply with the most current version of any applicable CAN/CSA standards for Underground Systems.
- A8.** Unless the Board otherwise directs, SE2 shall implement or cause to be implemented all of the policies, practices, mitigative measures, recommendations and procedures for the protection of the environment and the promotion of safety referred to in its application, or as otherwise adduced in its evidence in the EH-1-2000 proceedings, or as agreed to in its submissions on the environmental screening report.

B: Prior to Construction

For the purposes of these conditions, "construction" includes site preparation, clearing of vegetation, groundbreaking, mobilization and all other physical activities associated with the installation of the IPL.

- B1.** SE2 shall file with the Board:
- a) at least one hundred twenty (120) days prior to the commencement of construction or as the Board otherwise directs, a draft Environmental Management Plan (EMP) which shall describe:
 - i) all mitigation measures to be implemented for the protection of the environment and the criteria for their implementation;

- ii) the results of consultations with federal, provincial and municipal government agencies, landowners and other stakeholders in developing the EMP to date; and
 - iii) a plan for how SE2 will conduct any remaining consultations in respect of the development of the final EMP, and
 - b) at least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, a final EMP, for approval, which shall include an update on the results of consultations, and a description of how SE2 will address any outstanding concerns.
- B2.** At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a pre-construction assessment report on the nature and extent of Trumpeter Swan use in the area and the potential for Trumpeter Swan collisions with the IPL. The report shall include:
- a) the methodology used, the findings and any recommendations for further mitigation and monitoring;
 - b) a discussion of the effectiveness of any pre-construction monitoring conducted;
 - c) the qualifications of the person(s) responsible for the assessment; and
 - d) evidence that the Canadian Wildlife Service (CWS) and any other appropriate groups or agencies have been consulted in respect of the preparation of the assessment and the report.
- B3.** At least thirty (30) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a post-construction monitoring and follow-up program to address bird strikes on the IPL. This program shall include:
- a) monitoring of bird strikes on the IPL;
 - b) verification of the accuracy of the pre-construction assessment report predictions;
 - c) verification of the effectiveness of any mitigation implemented based on the recommendations arising from that report;
 - d) the results of consultations with the CWS in developing the program; and
 - e) a schedule for the filing of post-construction monitoring and follow-up program reports.
- B4.** At least one hundred twenty (120) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a listed plant species mitigation plan. The plan shall:

- a) identify the listed plants and listed plant communities which could occur in the area of the IPL crossing of Willband Creek and its floodplain;
- b) identify the mitigative options available and the criteria that would be applied for their implementation;
- c) describe the mitigative measures SE2 would implement for each listed plant species or community, in the event that any of those species or communities are found;
- d) describe the methodology and schedule proposed for the listed plant species survey referred to in Condition B5; and
- e) include the results of consultations with appropriate provincial and federal agencies, on the appropriateness of the mitigative measures proposed for each species and on the methodology and timing of the survey referred to in Condition B5.

B5. At least thirty (30) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a listed plant species survey report for the area where the IPL route crosses Willband Creek and its floodplain describing:

- a) any changes from SE2's proposed methodology and schedule for field surveys from that set out in the listed plant species mitigation plan referred to in Condition B4;
- b) the results of listed plant surveys, and in the event that listed plant species or communities are found to occur:
 - i) the site- and species-specific strategies SE2 will implement to mitigate any potentially adverse impacts to listed plants or listed plant communities identified in the survey;
 - ii) SE2's follow-up plan to verify the effectiveness of the mitigative measures to be implemented; and
- c) the results of any consultations with appropriate provincial and federal agencies, and a description of how SE2 will address any outstanding concerns of those agencies.

B6. At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval:

- a) all plans and measures for the protection of fisheries resources, including revised plans for the upper Willband Creek crossing;

- b) any comments and recommendations from the Department of Fisheries and Oceans (DFO) regarding SE2's revised plans and all other proposed mitigation measures; and
- c) the measures SE2 will implement to address DFO's comments and recommendations.

B7. At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, evidence of CPR's acceptance of SE2's detailed Electromagnetic Compatibility Study (the Study), risk assessment and proposed mitigation, to be completed during the IPL final design. This shall include written confirmation that CPR has been provided with sufficient information and opportunity to review and comment on the methodology, results and proposed mitigation.

In the event that SE2 is not able to obtain such evidence, SE2 shall, at least sixty (60) days prior to construction or as the Board otherwise directs, file the Study with the Board, for approval, and a statement of SE2's understanding of CPR's concerns with the Study.

B8. At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, an Archaeological Impact Assessment (AIA) for that portion of the final detailed route not previously surveyed. The AIA shall include:

- a) the methodology used;
- b) the results of surveys;
- c) any further recommended mitigation measures; and
- d) correspondence from the provincial archaeological authorities regarding the acceptability of SE2's AIA and mitigation measures to be implemented.

B9. At least one hundred twenty (120) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a Phase 1 environmental site assessment (ESA) for potential soil contamination. The Phase 1 ESA shall comply with the most current applicable CSA standards, be conducted by qualified personnel and shall be for all locations along the right-of-way where excavation is to be conducted.

In the event that a Phase 2 or Phase 3 ESA is recommended, SE2 shall also file, for approval, at the same time as its Phase 1 report, a schedule for all further ESA work and a schedule for the filing of any Phase 2 or Phase 3 ESA reports. SE2 shall subsequently file with the Board, for approval, the Phase 2 or Phase 3 ESA reports.

B10. At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a report on SE2's traditional use study conducted in conjunction with the Stó:lō Nation.

At least thirty (30) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board any comments on the final report from the Stó:lō Nation and the measures SE2 will implement to address any outstanding concerns of the Stó:lō Nation.

- B11.** At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file documentation that demonstrates to the satisfaction of the Board that the design of the IPL complies with applicable utility standards and interconnection requirements of the British Columbia Hydro and Power Authority (BC Hydro).
- B12.** At least sixty (60) days prior to the commencement of construction or as otherwise directed by the Board, SE2 shall file with the Board documentation that demonstrates to the satisfaction of the Board, that funding is, and will continue to be available and sufficient for the de-commissioning and abandonment of the IPL.
- B13.** At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board, for approval, a quality assurance and compliance program. The program shall describe the methods by which SE2 will ensure the IPL is designed, constructed and operated in conformance with conditions of approval, company designs, specifications and undertakings set forth in its application or as otherwise adduced in its evidence before the Board in the EH-1-2000 proceedings. The program should include, but not be limited to:
- a) a process or procedure to identify conditions of approval, company designs, specifications and undertakings set forth in the application or otherwise adduced in SE2's evidence;
 - b) processes or procedures to monitor, measure, document and report on compliance with conditions of approval, company designs, specifications and undertakings set forth in the application or otherwise adduced in SE2's evidence;
 - c) the name or position title of the person(s) responsible for each aspect of the program;
 - d) the qualifications and name or position title of the person(s) authorized to stop work should it be in non-conformance with conditions of approval, company designs, specifications and undertakings set forth in the application or otherwise adduced in SE2's evidence;
 - e) a process or procedure to identify and implement any corrective action that may be necessary before recommencing work; and
 - f) a process or procedure to evaluate the effectiveness of the corrective actions taken.
- B14.** At least sixty (60) days prior to the commencement of construction or as the Board otherwise directs, SE2 shall file with the Board:

- a) the safety manual to be followed for construction of the IPL;
- b) an outline of the safety training program to be implemented for construction of the IPL; and
- c) documentation that demonstrates to the satisfaction of the Board, that CPR has been provided with sufficient information and opportunity to comment on the safety manual.

B15. At least ninety (90) days prior to construction of the IPL or as the Board otherwise directs, SE2 shall file an updated construction schedule with the Board.

C: Prior to Operation

C1. At least sixty (60) days prior to operation of the IPL or as the Board otherwise directs, SE2 shall file with the Board the O&M Manual that will apply to the IPL.

SE2 shall file with the Board documentation that demonstrates to the satisfaction of the Board that CPR has been provided with sufficient information and opportunity to review and comment on the O&M Manual.

C2. At least ninety (90) days prior to operation of the IPL or as the Board otherwise directs, SE2 shall file with the Board the Emergency Response Plan.

SE2 shall file with the Board documentation that demonstrates to the satisfaction of the Board that CPR has been provided with sufficient information and opportunity to review and comment on the Emergency Response Plan.

C3. At least sixty (60) prior to the operation of the IPL or as the Board otherwise directs, SE2 shall file with the Board documentation that demonstrates to the satisfaction of the Board that SE2 has arranged for the operation and maintenance of the IPL to be carried out by qualified persons and in accordance with the standards and procedures set out in the O&M Manual. SE2 shall not, without the leave of the Board, terminate or otherwise modify, arrangements or commitments made pursuant to this condition.

C4. No later than thirty (30) days after first energizing the IPL or as the Board otherwise directs, SE2 shall file with the Board documentation that demonstrates to the satisfaction of the Board that the IPL as built is in compliance with BC Hydro's utility standards and interconnection requirements.

D: During Operation

D1. SE2 shall retain adequate and appropriate records of operation and maintenance activities for the Board's auditing purposes.

D2. No later than thirty (30) days after the date that the IPL is placed in operation or as the Board otherwise directs, SE2 shall file with the Board confirmation by an officer of the company that the IPL was completed and constructed in compliance with all applicable

conditions in this Certificate and all policies, practices and procedures set forth in its application or as otherwise adduced in its evidence before the Board during the EH-1-2000 proceedings. If compliance with any of these provisions cannot be confirmed, the officer of the company shall file with the Board details as to why compliance cannot be confirmed.

- D3.** On or before the 31 of January of each of the first three years following completion of construction of the IPL or as the Board otherwise directs, SE2 shall file with the Board a report that:
- a) identifies any environmental issues which arose during construction or in the course of the previous year;
 - b) describes the measures SE2 took and the current status of the issues identified and whether they are resolved or unresolved; and
 - c) provides the further measures SE2 proposes to take to address any unresolved issues.
- D4.** During the first 2 years of the operation of the IPL or as the Board otherwise directs, SE2 shall:
- a) advise the Board in the event that the groundwater monitoring program for the Power Plant indicates that there will be adverse effects on existing wells and surface waters being used in Canada;
 - b) advise the Board of any concerns brought forward regarding impacts in Canada of the Power Plant on existing groundwater, wells, springs and surface waters;
 - c) in the event that the Board is advised pursuant to D4a) or D4b), file with the Board the program that would be used to evaluate and monitor the impacts or concerns and the criteria that would be used in determining whether mitigation would be required;
 - d) advise the Board, following implementation of the program referred to in D4c), of the findings of the evaluation, any mitigation employed, and the effectiveness of the mitigation; and
 - e) notify the Province of British Columbia, the City of Abbotsford, and the Fraser Valley Regional District of any submissions to the Board pursuant to a), b), c), or d).
- D5.** SE2 shall:
- a) conduct and implement mitigative measures regarding potential Power Plant noise effects on residences in Canada that it committed to in the SCA, specifically:

- i) a minimum of twelve (12) noise monitoring locations shall be selected at up to a distance of 3.5 miles from the Power Plant, with some located on each side of the U.S.-Canada border. SE2 shall consult with the City of Sumas, Whatcom County, the City of Abbotsford and the Province of British Columbia, regarding the selection of monitoring locations, with a focus on residential receptors;
 - ii) in addition to monitoring A-weighted sound levels, SE2 shall evaluate pre-construction low frequency noise and tones, including the gathering of one-third octave band data; and
 - iii) implement specific noise control measures to be developed through an iterative process with EFSEC during final Power Plant design;
- b) file with the Board all noise monitoring and other related reports, noise mitigation proposals and other documents it is to file with EFSEC pursuant to the SCA; and
 - c) notify the Province of British Columbia, the City of Abbotsford, and the Fraser Valley Regional District of any submissions to the Board pursuant to b).

D6. SE2 shall:

- a) conduct and implement mitigative measures regarding the environmental effects in Canada of the Power Plant that it committed to in the SCA; and
- b) file with the Board all monitoring and other reports, mitigation proposals, including the offset plan, and other documents it is to file with EFSEC pursuant to the SCA.

E: Expiry of Certificate

- E1.** Unless the Board otherwise directs prior to 31 December 2006, this Certificate shall expire on 31 December 2006 unless the IPL has been placed in operation by that date.

Appendix III

Rulings

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20 Jan 2001 Ruling On SE2's Procedural Motion¹

The applicant has filed a motion referred to as the Sumas Procedural Motion [which is:

Should the Board amend section 11.3 of the Hearing Order dated 9th of November 2000 to provide that:

- (a) the presentation of evidence and cross-examination of witnesses proceed in the following sequence:*
 - (i) the Applicant*
 - (ii) Option 2 Intervenors*
 - (iii) Option 1 Intervenors*
- (b) provide the following directions in respect of Option 1 Intervenors:*
 - (i) Option 1 Intervenors not presenting expert evidence be limited to four minutes for the presentation of their oral evidence;*
 - (ii) Option 1 Intervenors presenting expert evidence be required to file their evidence with the Board and serve the Applicant with such evidence no later than 23 January 2001; and*
 - (iii) Option 1 Intervenor applicants be required to advise the Board and the Applicant by 11 January 2001 whether they intend to call third-party witnesses at the hearing. Option 1 Intervenor applicants who intend to call third-party witnesses at the hearing be required to proceed as Option 2 Intervenors.]*

The Board has an overarching responsibility to ensure that the hearing process is fair to all parties. This may require some adjustment in details of the process as the hearing progresses. In this case, because of the number of parties and the complexity of the issues, we have determined that further modifications to the Board's Hearing Order are necessary to ensure fairness to all parties.

With regard to the order of appearances proposed by the applicant in motion item 3(a), we have been persuaded that this order should be changed. At the hearing commencing 23 April, we will proceed first with the complete case of the applicant. Only after we have heard all of the applicant's evidence and cross examination of the applicant's witnesses will we hear from the intervenors.

¹ Transcript EH-1-2000, 20 January 01, Vol. 3, para. 172-186.

Generally we will hear Option 2 intervenors prior to hearing Option 1 intervenors. However, because of the numbers and in order to accommodate the public, the Board is prepared to hold evening and Saturday sessions to hear some Option 1 intervenors not offering expert testimony or relying on third party documents. We will revisit this particular matter after the hearing commences on 23 April 2001.

With regard to the request to impose time limits in item 3(b)(i) of the applicant's motion, this part of the motion is denied. That being said, the Board has an obligation to ensure that hearing time is used effectively. This is in everyone's interest. We will, as appropriate, interject to ensure there is no abuse of the process. The cooperation of all parties in this regard will be appreciated.

With regard to items 3(b)(ii) and (iii) of the applicant's motion, the Board has been persuaded that some adjustments are required to ensure fairness and to eliminate the element of surprise in this process. Mr. Lusk was correct in suggesting that the Board's intention in establishing an Option 1 intervenor category was to facilitate the participation of individuals in the National Energy Board process by providing a less onerous opportunity to appear and make their individual views known directly to the Board.

We have decided that the Option 1 intervenors wishing to call expert evidence or file reports must do so by 2 April 2001. Because this clarification may change the expectations of some Option 1 intervenors, fairness dictates that the dates be adjusted so as to give Option 1 intervenors time to prepare and the applicant time to receive sufficient notice. Any Option 1 intervenor who expects the Board to consider their evidence as expert evidence is expected to comply with this filing requirement.

Where reports are provided and the right to cross-examination is restricted, the Board notes that the admissibility and the weight may be subject to challenge.

Option 1 intervenors in this situation will be entitled to address evidence relative to the international power line and, depending on the outcome of the 19 February hearing, the evidence concerning the environmental effects in Canada of the power plant located in the State of Washington.

The Board has been persuaded that the addition of a round of Information Requests would assist all parties. Accordingly, we have prepared an amended Timetable of Events that accompanies this ruling. This timetable reflects the dates that we are advised are agreed to by counsel for the applicant, City of Abbotsford and the Fraser Valley Regional District and the David Suzuki Foundation and the Society Promoting Environmental Conservation. During the course of arguing the Sumas Procedural Motion a number of intervenors requested an extension of the date of 23 January 2001 for the filing of written evidence by Option 2 intervenors. The Board notes that this date affects only Option 2 intervenors proposing to file evidence on issues other than the environmental effects in Canada of the Sumas power plant. In these circumstances, the Board is not persuaded that an adjustment of the date is required.

15 Oct 2002 Ruling on various applications for Late Intervenor Status

As of 2 October 2002, the National Energy Board (the Board) had received 164 applications for late intervenor status from individuals, First Nations and government representatives. By letters dated 13 and 23 September, and 2 and 7 October 2002, the Board established a process for the filing of comments by SE2, Option 2 intervenors and reply by the late intervenor applicants. The Board has dealt with four of these applications in previous correspondence.

[The Board listed those who commented.]

The Board has considered all of these submissions in reaching the following decisions.

The Board notes that many of the additional requests for late intervenor status may have been prompted by information provided by the Abbotsford Downtown Business Association (ADBA), a copy of which was filed with SE2's letter of 18 September 2002. The document contains the following statement:

The National Energy Board has opened the door for new intervenors to voice their opposition to SE2 at the hearings beginning October 18th. But you must sign up now!

The document goes on to indicate the points to be included in the letter.

The Board is concerned that a number of points in the ADBA document are misleading. First, it suggests that the Board has opened the process for more intervenors to register. This is incorrect. The Board has not stated that it would extend the deadline for filing applications for intervenor status. In response to questions raised by parties about late intervenors, the Board stated in its letter of 16 August 2002:

With respect to the requests to establish an additional process for late interventions the Board notes that there is a standard process already in place. A party must apply in writing to the Secretary of the Board (with a copy to SE2) stating the reason that the request is late, what interest the party may have in this matter, and why the party feels that neither SE2 nor any other intervenor would be prejudiced by the party becoming a late intervenor. The Board will then decide, in each case, whether to grant the request for late intervention.

In the above, the Board stated the usual process that is available in any proceeding before it and was not "open[ing] the door for new intervenors. . ."

Secondly, the ADBA document implies that the October 18 hearing provides an opportunity to voice opposition to SE2. As set out in the Board's Notice of Motions Hearing, the hearing commencing 18 October 2002 is for the sole purpose of hearing argument on certain motions, not to hear views on the merits of the SE2 power line application. The schedule for the hearing on the SE2 power line application itself has yet to be determined.

Thirdly, the ADBA document implies that the only way to voice opposition to SE2 is to become an intervenor. This again is inaccurate. Persons wishing to make their views known may also do so by filing a letter of comment.

Criteria for Acceptance of Late Intervenorors

As a quasi-judicial, public interest tribunal, the Board encourages a wide range of interests to be represented in its hearings. While consideration of the public interest is not dependent upon the right of all members of the public to make representations,¹ under the Board's process, representations may be made through interventions and by letter of comment. However, whether or not someone may become a late intervenor is a matter of Board discretion; it is not a right.

The primary purpose of intervening is to add to the Board's understanding of the issues through participation in the hearing process. The Letter of Comment process provides an

additional avenue for persons to express their views in respect of a project without having to further participate in that process. As well, persons who merely wish to monitor or sit in on the proceedings may do so without being intervenors as the hearings are open to the public.

In carrying out its hearing responsibilities particularly in circumstances where, as in this case, there have been hundreds of requests to intervene, the Board must find a balance between the accommodation of the views of those with an interest in the application and the need for an efficient regulatory process.

It is important to recognize that the Board makes its decisions based on the strength of the evidence and arguments presented to it, not on the sheer number of individuals who support a particular position or viewpoint. Further the Board expects that like minded intervenors would coordinate their representations to make the most effective use of the hearing time available. This would also result in more effective use of both the Board's resources and those of the intervenors.

While the Board traditionally sets a lower threshold for becoming an intervenor when applications for intervention are filed within the deadlines of the hearing schedule, the Board is of the view that the threshold becomes increasingly higher as the hearing progresses. As the presiding member of the Board stated at the 18 January 2001 hearing in Abbotsford "once the proceeding is under way it is a strong onus for any party to establish they should be granted late intervenor status."

In assessing late intervenor applications, the Board takes into consideration a number of factors including

- potential prejudice to the applicant and other parties
- whether the applicant for late intervention has adequately justified their interest and adequately justified their reason why the intervention is late
- whether the participation of the applicant for late intervention is likely to materially assist in the understanding of the issue raised by the application
- whether those who have already been granted intervenor status are able to sufficiently advance concerns relating to the public interest

1 *Friends of the Athabasca Environmental Assn. v. Alberta (Public Health Advisory & Appeal Board)* (1996), 37 Alta. L.R. (3d) 148, (Alta C.A.).

The Board has considered the applications for late intervenor status referred to in the Board's letters of 23 September and 2 October 2002 in light of all of the above factors. For ease of reference, the Board will address the applications in an order similar to that set out in the SE2 letter of 18 October 2002.

Alberta Department of Energy (ADOE)

The ADOE stated that its interest in the hearing was any determination by the Board as to the Board's jurisdiction to consider the environmental effects associated with projects upstream of a transmission line, especially where such a facility is outside the territorial boundaries of Canada, and the potential impact that a decision may have on trade in energy goods and services. ADOE also stated that the original list of issues contained in the hearing did not foreshadow the important questions of jurisdiction and the potential for consideration of environmental effects from generation facilities located in Washington State. The ADOE went on to assert that other participants in this proceeding will not be prejudiced because of the ADOE intention to participate in a limited way in these proceedings.

SE2 supports the ADOE's application.

Mr. Yardley, counsel for the City of Abbotsford/Fraser Valley Regional District (Abbotsford/FVRD), commented that whether the original list of issues foreshadowed the question of jurisdiction is open to question but the issue of jurisdiction has clearly been part of the public record since at least January 2001. Mr. Peachey states that, as SE2 supports ADOE's late intervention, it can be safely assumed that ADOE will be presenting evidence helpful to SE2's case, which will "clearly prejudice the vast majority of intervenors." He submits that if ADOE is given intervenor status, then all other late intervenors should as well.

In reply, ADOE states that it does not anticipate actively participating in the proceedings following the environmental effects motion. It is of the view that the Board's decision may establish an important precedent with implications for existing and proposed energy projects outside of the Fraser Valley and B.C.

As a federal tribunal, the Board's decision on the environmental effects motion could potentially have implications for energy projects and resource development and on trade in energy goods and services across Canada. In light of Alberta's significant role in these areas, the ADOE has an interest in the environmental effects motion that is unique among the interests raised by the late intervenor applicants and the registered intervenors.

In the Board's view, participation of the ADOE is likely to materially assist the Board in understanding the issue raised by the environmental effects motion. Thus the Board believes that it should hear the submissions of the ADOE for purposes of completeness of the record on the environmental effects motion. Further, the Board does not consider that ADOE's participation in the motion will prejudice any other party.

Accordingly, ADOE is granted Option 1 Intervenor status **for the limited purpose** of participating in the environmental effects motion. ADOE's letter of 25 September 2002 and its Book of Authorities and Affidavits previously submitted to the Board and served on Option 2 Intervenor will be added to the Exhibit List for the environmental effects motion.

The Stó:lō Nation (Stó:lō)

The Stó:lō's stated interest is with the potential impact the project may have on their constitutionally protected rights to their traditional lands and resources under section 35 of the *Charter of Rights and Freedoms*. Although Mr. Peachey raised concerns about the inclusion of the Stó:lō in relation to other late intervenor applicants, no party opposed the Stó:lō application. The Stó:lō has since advised the Board by letter of 7 October 2002 that the current intervenors, Sumas and Matsqui First Nations, have agreed to have the Stó:lō Nation make a single presentation on their behalf.

Pursuant to section 2 of the *Canadian Environmental Assessment Act*, an environmental assessment of a Project must consider the changes a project "may cause in the environment, including any effect of any such change . . . on the current use of lands and resources for traditional purposes by aboriginal persons . . ."

As an environmental screening pursuant to the CEAA is required for this project, the Stó:lō and the other First Nation intervenors are in a special position to be able to inform the environmental screening in this regard.

Further, as the Stó:lō's stated interest is the potential impact the project may have on their constitutionally protected rights to their traditional lands and resources, the Board is of the view that the Stó:lō should be heard in that regard. Accordingly the Stó:lō are granted Option 2 Intervenor status in the EH-1-2000 hearing.

Chief Betty Henry - Kwaw Kwaw Apilt First Nation

Chief Betty Henry stated that her interest was "in support of Sumas First Nation" and that her interest is to "go along with A/Chief Dalton Silver". As Chief Betty Henry has not asserted any particular interest of her own or on behalf of the Kwaw Kwaw First Nation, the Board has decided not to grant her intervenor status. As it appears the Stó:lō and Sumas First Nation will be collaborating on a single First Nations presentation, Chief Betty Henry will likely have an opportunity to provide her support of the Sumas First Nation through that avenue.

Mr. Clint Hames - Mayor of Chilliwack

The Board notes that there has been widespread notification of the proceeding and an extra opportunity to be granted late intervenor status at the 18 January 2001 hearing. Mr. Hames has provided no reasons for being late nor has he raised an interest that in the Board's view is not already represented in this proceeding. Thus the Board is not persuaded that granting Mr. Hames intervenor status is likely to add materially to the Board's understanding of the issues raised by the application. Accordingly the Board has decided to deny Mr. Hames' application for late intervenor status.

Mr. Randy Hawes - MLA for Maple Ridge

Mr. Randy Hawes, MLA, has concerns about the impacts of SE2 and wishes to reflect the views of his constituents. His reason for the late application was that he was waiting for the results of Governor Locke's decision and was temporarily absent over the latter part of the summer.

The Board notes, first, that Mr. Hawes is listed on the current List of Parties as the representative for the District of Mission and the Board has not received notification of a change in the representation for the District of Mission. Secondly, Mr. Hawes has raised no unique or new interest that is not already represented by other registered intervenors. As a result, the Board is not persuaded that granting Mr. Hawes additional intervenor status is likely to add materially to the Board's understanding of the issues raised by the application. Accordingly the Board has decided to deny Mr. Hawes' application for late intervenor status.

Mr. George Peary

Mr. Peary is currently listed as the representative of the Fraser Valley Health Region on the List of Parties for this proceeding. As there is no information before the Board indicating a change in that status, Mr. Peary already has the opportunity to make representations to the Board in that capacity. As a result, the Board has decided not to grant additional intervenor status to Mr. Peary.

Mr. Christopher Smith

In the current List of Parties for this proceeding, Mr. Smith is listed as a representative of the Abbotsford Chamber of Commerce. Mr. Smith advises in his application that this role is "not as great" and he now seeks status as an intervenor on his own behalf.

However, Mr. Smith remains the representative for the Chamber of Commerce, and has raised no other interests that are not already represented by other registered intervenors. As a result, the Board is not persuaded that granting Mr. Smith additional intervenor status is likely to add materially to the Board's understanding of the issues raised by the application. Accordingly, Mr. Smith's application for late intervenor status is denied.

Ms. Marian Bedill

The Board notes that Ms. Bedill is a member of the GASP citizen group and as such she already has the opportunity to participate through her representative group. Accordingly Ms. Bedill's application for late intervenor status is denied.

Remaining 152 Applications for Late Intervenor Status

[listed in Table that has not been reproduced in this Appendix]

Many of the remaining applications have raised similar concerns respecting the environmental impacts of the SE 2 power plant, the proposed power line and associated health effects for residents of the Fraser Valley, as the approximately 430 currently registered intervenors.

As well, many of the applicants have indicated that they merely wish to add their voice to an already long list and have stated in their applications that they have nothing, or very little new, to add. Many have also indicated that they wish to make a short submission. In such cases a letter of comment may serve their purpose. In addition, individuals wishing to monitor the proceedings are free to attend and observe, as the hearings are open to the public.

Given the number of currently registered intervenors who have raised the same issues as raised by these applicants for late intervenor status, the Board is of the view that granting intervenor

status to the applicants set out in the attached table is not likely to add materially to the Board's understanding of the issues that it must decide. Therefore these applicants have not met the onus to justify being granted intervenor status at this stage of the proceeding. Accordingly the requests for late intervenor status of those groups and individuals set out in Table 1 are denied. However each of those applications will be entered on to the record of the EH-1-2000 proceeding as a Letter of Comment.

21 Oct 2002 Ruling on the Motion by Mr. Randy White, MP, for discontinuance of the SE2 Hearing¹

By letter dated 26 June 2002, Mr. Randy White filed the following motion:

Whereas it is the unanimous opinion of all Canadians so involved in the process, that the SE2 Application to proceed within the jurisdiction of Canada not be approved, that the NEB discontinue its hearings regarding an application to construct and operate an international power line Hearing Order EH-1-2000.

The Board heard oral argument from all interested parties on 18 and 19 October 2002 in Abbotsford, B.C. The Board has considered all of the submissions and provides its decision as follows:

Mr. White and those in support of the motion argued that all of the elected governments, Canadian community organizations and all individuals before the Board in this process oppose the SE2 project and as a result, the Board should dismiss SE2's application on that basis.

Mr. White argued that it is the opinion of those affected bodies representing everyone opposed to the project, that the project is not in the Canadian public interest.

Mr. White argued further that it is necessary for the Board to acknowledge and recognize that the transmission line is an essential component of a generating station that will adversely affect many Canadian lives.

He submitted that it is imperative that the Board not exclude from its consideration all aspects of the generating plant.

Many, if not all, of the other submissions in support of the motion also raised concerns with the Environmental Effects in Canada of the power plant in Washington State.

Mr. White relied on Sections 4 and 45 (1) of the National Energy Board Rules of Practice and Procedure 1995 as the means by which the Board could dismiss the application.

Mr. Van Dongen argued that it was in the interests of all taxpayers to discontinue the proceeding.

In response, Mr. Lusk, on behalf of SE2, argued that the motion is frivolous, disregards all notions of fairness and shows contempt for the regulatory system created by Parliament. He

1 Transcript EH-1-2000, 21 October 2002, Vol. 7, para. 1857-1875.

submitted that there is no legal basis to support the assertion that the alleged lack of Canadian support is a valid reason for granting the motion and summarily refusing to hear SE2's Application or to deny it the opportunity to present its case.

Mr. Lusk further argued that one of the essential rules of natural justice is that a party be allowed to present its case.

In reply, Mr. White rejected Mr. Lusk's assertion that the motion is frivolous and reiterated that the level of opposition to the SE2 power line Application warrants a discontinuance of this proceeding.

As a court of record, the Board is bound by the principles of natural justice and fairness. One of those principles is the right of an applicant to have its case heard.

As well, Parliament has charged the Board with making its determinations in the public interest. Such determinations can only be made by the Board on the basis of a complete understanding of the affected interests and issues raised by all parties.

Thus, even when faced with widespread opposition to a project at the outset of a hearing, the Board has a duty to hear the applicant, as well as other parties, on the merits of the application before it.

Mr. White's motion seeks to have the Board make its public interest determination without hearing all parties on the merits of the Application. In the Board's view, such an outcome would be contrary the rules of natural justice and fairness with which the Board must comply.

The Board notes that the sections of the NEB Rules of Practice and Procedure 1995, referred to by Mr. White, are not applicable to this motion. Section 4 allows for a variation to the rules as set out therein, and subsection 45(1) applies to procedures for a review or rehearing of a decision already taken by the Board.

With regard to the argument that the hearing should be discontinued due to the costs to intervenors opposing the Application, the Board considers that such costs are a consequence of living in a society in which individuals may become involved in decision-making processes and cannot form the legal basis for dismissing an application without hearing it. Accordingly, Mr. White's motion for a discontinuance of the hearing of the SE2 Application is denied.

23 Oct 2002 Ruling on Mr. Degen's Motion for review of Application because of absence of detail regarding SE2 use of the CPR right-of-way¹

By letter dated 20 January 2001, Mr. James Degen filed a motion, the wording of which was amended on 19 October 2002 at the commencement of the oral hearing.

The amended motion reads as follows:

¹ Transcript EH-1-2000, 23 October 02, Vol. 9, para. 5525-5546.

- a) *the Board review the IPL application Sumas E2 for potential prejudice, at this time of the proceeding, arising from the absence of full detail of an alleged verbal approval between Sumas 2 and Canadian Pacific Railway for use of the CPR right-of-way in Canada.*
- b) *the Board review the IPL application Sumas E2 for any fundamental deficiency in the application arising from absence of full detail of an alleged verbal approval between Sumas and Canadian Pacific Railway.*

Mr. Degen filed a number of documents in support of his motion and SE2 filed a Brief of Authorities prior to the oral hearing on the motion. The Board heard oral argument on the motion from all interested parties on 19 and 21 October 2002 in Abbotsford, B.C.

The main thrust of this motion is that Mr. Degen and other intervenors are prejudiced by not knowing the "conditions associated with the verbal approval," for agreement between the Canadian Pacific Railway -- which I will refer to as "CPR" -- in respect of the use of the CPR right-of-way for the proposed international power line.

Mr. Degen submitted that -- and again I quote from his argument:

The public interest requires the Board to be in possession of full details of any initial verbal approval and be in a position to meet any reasonable public inquiry about it. If the Board cannot tell the public the detail, then it should seriously question the adequacy of the IPL application,

and that's the end of the quote.

Mr. Degen also referred to a letter from the CPR dated 18 January 2001. In response to questions by the presiding member of the Panel, Mr. Degen submitted that should the Board agree with his arguments, the appropriate remedy would be to dismiss the application and invite SE2 to reapply.

Mr. Yardley spoke to the remedy that Mr. Degen is seeking and suggested that the motion is in the nature of a request for further and better responses. He submitted that, in the alternative to Mr. Degen's request for dismissal of the application, an appropriate order would be to require SE2 to update the status of its discussions with the CPR.

Mr. Barry Penner argued that if SE2 does not have a written agreement, then it is directly relevant to whether or not there is the spectre of expropriation.

A number of other intervenors spoke in support of Mr. Degen's motion and Mr. Yardley's request for further information. While all of those submissions have not been summarized here, they have been considered by the Board.

In response to the motion, Mr. Godsoe on behalf of SE2 submitted that, and I quote,

There is no requirement in Part III.1 or elsewhere in the Act or the Regulations to furnish all the necessary land acquisition agreements at the time an application for a certificate is submitted to the Board

or at the time of the hearing of an application.

In support, Mr. Godsoe referenced the decision of the Board in Hydro Quebec EH-3-84, the Board's Information Bulletin, Pipeline Route Approval Procedures and the *National Energy Board Act*.

In reply, Mr. Degen argued that Mr. Godsoe had not addressed the core issue of both of his motions which is the prejudice contained in the Application.

The Board is of the view that the answer to this motion can be found within the scheme of the *National Energy Board Act*. The requirements for an application for a certificate for an international power line as set out in section 5 of the National Energy Board Electricity Regulations do not include the filing of final land acquisition agreements. *The National Energy Board Act* does not require that the land acquisition process be completed at the time an application is filed or even before a certificate is issued.

At the certificate stage, the Board determines the acceptability of the general route. If a certificate is granted, a company is required to file a Plan, Profile and Book of Reference of its power line for Board approval. This is a detailed plan of the proposed location of the power line, which includes descriptions of the specific lands to be crossed and the owners of those lands.

The applied-for detailed route may include revisions to the general route; thus it is common practice for companies to apply for a certificate without having all of its land acquisition agreements in place while continuing to negotiate with landowners. Further, the Board plays no role in the negotiations of these third party agreements.

None of the parties addressed the relevance that a third party agreement would have to the central question before the Board of whether the applied-for power line is in the public interest. As the finalized land acquisition agreements for the proposed route of the power line are not necessary for the Board to reach a decision on a certificate application, the Board fails to see how a verbal approval from 1999 is relevant to the Board's determination of the application, therefore, the Board does not consider that the absence of detail of any verbal approval that CPR previously provided to SE2 constitutes a fundamental deficiency in the SE2 Application.

In addition, all intervenors have the opportunity to consider the proposed route for the power line as set out in the application and to ask questions and make submissions in that regard within the hearing process. The Board is not persuaded that intervenors are prejudiced in preparing a response to the SE2 Application if they do not have further information regarding CPR approval for the use of its right-of-way by SE2.

Accordingly, Mr. Degen's motions are denied.

9 Dec 2002 Ruling on the Environmental Effects Motion

A. INTRODUCTION

Sumas Energy 2, Inc. (SE2) filed an application dated 7 July 1999 under section 58.11 of the *National Energy Board Act* (NEB Act) for a permit to construct an international power line (IPL). SE2 subsequently filed an amended application dated 23 October 2000 pursuant to Part III, sections 58.16 and 58.23 of the NEB Act requesting a Certificate of Public Convenience and Necessity to construct the IPL. The IPL would originate in the United States at a proposed gas-fired power plant in Sumas, Washington (Power Plant) and cross the Canadian border near Abbotsford, B.C. It would extend approximately 8.5 km from the border northward on Canadian Pacific Railway, City of Abbotsford and British Columbia Hydro and Power Authority (BC Hydro) existing rights-of-way to BC Hydro's Clayburn substation in Abbotsford. It would operate at 230,000 volts. No customers for the electricity to be transported on the IPL have yet been identified. The IPL would enable SE2 to transmit power from the international border through the Clayburn substation to the main electric grid that services British Columbia, Alberta and eleven western U.S. states.

On 21 December 2000 SE2 filed a motion seeking the determination of the following question:

Should the Board hear evidence concerning the environmental effects in Canada of SE2's proposed power plant to be located in Sumas, Washington?

The National Energy Board (the Board) had scheduled a hearing of this motion (Environmental Effects Motion) to be heard on 19 February 2001. However, following denial of approval of the proposed Power Plant by the Energy Facility Site Evaluation Council (EFSEC)¹ of Washington State, SE2 requested, on 19 February 2001, that the Board adjourn the public hearing of the IPL application. Therefore the hearing of the Environmental Effects Motion did not proceed at that time.

SE2 subsequently amended its Power Plant application to EFSEC and on 24 May 2002 EFSEC recommended approval of construction of the Power Plant. By letter dated 4 June 2002, SE2 requested that the Board reconvene the hearing on the IPL. By letter dated 19 June 2002, SE2 stated that the design, engineering and routing of the IPL had not changed since the amendments to the IPL Application were filed on 23 October 2000.

On 16 August 2002, the Board issued a Notice of Hearing for the Environmental Effects Motion and a number of other motions pursuant to Hearing Order EH-1-2000, setting down a hearing date for the motions commencing 18 October 2002.

On 18 September 2002, the Board provided clarification with respect to hearing the Environmental Effects Motion as follows:

¹ The mandate of the Energy Facility Site Evaluation Council is described *infra*, note 57.

The Board has decided that it will hear evidence in affidavit form. For greater certainty, that evidence must be directly relevant to, and must be confined strictly to, the questions of whether the Board has jurisdiction to consider the environmental effects in Canada of Sumas' proposed Power Plant to be located in Sumas, Washington, and if so, whether the Board should consider those effects?

In the Board's view, it would be inappropriate and unnecessary to hear all of the evidence of possible environmental effects in Canada of the plant in Washington before deciding the questions raised by the Environmental Effects Motion.

The Board heard arguments from interested parties on the Environmental Effects Motion in Abbotsford, British Columbia on 21 to 23 October 2002 and provides the following ruling on the motion.

B. BOARD AUTHORITY TO CONSIDER ENVIRONMENTAL EFFECTS OF THE POWER PLANT

All parties agreed that, if the Board has authority to consider the environmental effects in Canada of the Power Plant, that authority comes from either the *Canadian Environmental Assessment Act* (CEA Act) or the NEB Act.

1.0 The Canadian Environmental Assessment Act

1.1 Submissions of the Parties

Sumas Energy 2, Inc.

SE2 argued that there is no express language within the CEA Act allowing the Board to examine facilities or activities outside Canadian borders, to assess their environmental effects within Canadian borders, or to examine public concern about facilities outside of Canada.

SE2 submitted that similar provisions in the CEA Act's predecessor, the *Environmental Assessment Review Process Guidelines Order* (EARPGO) were considered by the Board in *CanStates Gas Marketing et al.*² In that case the Board concluded that there was no implicit authority in the EARPGO for the Board to assess transboundary environmental effects that migrate into Canada.

SE2 relied on *Citizen's Mining Council of Newfoundland & Labrador Inc. v. Canada (Minister of the Environment)*,³ *Manitoba's Future Forest Alliance v. Canada (Minister of the Environment)*⁴ and *Friends of the West Country Assn. v. Canada (Minister of Fisheries & Oceans)*⁵ in support of its argument that the IPL alone constitutes the project for the purposes of

2 National Energy Board, GH-3-94 (November 1994) [hereinafter *CanStates*].

3 (1999), 29 C.E.L.R. (N.S.) 117 (F.C.T.D.).

4 (1999), 30 C.E.L.R. (N.S.) 1 (F.C.T.D.).

5 [2000] 2 F.C. 263 (F.C.A.) [hereinafter *West Country*].

the CEA Act. It argued that this is the only scoping of the project that is reasonable, as the Board can only assert jurisdiction over physical works and activities in Canada.

Further, SE2 submitted that a Responsible Authority (RA), acting under subsection 16(1)(a) of the CEA Act, must exercise its discretion reasonably when determining the scope of the cumulative effects assessment. SE2 argued that it is not reasonable to include the Power Plant or its environmental effects in Canada within the scope of the assessment when dealing with cumulative effects for two reasons.

First subsection 16(1)(a) contains no express language allowing the Board to examine projects or activities outside Canadian borders or assess their environmental effects within Canadian borders. SE2 submitted that the words “in combination with other projects or activities” must relate to other projects or activities over which the Board has jurisdiction. As a result, SE2 submitted that the Board does not have jurisdiction to extend the scope of the assessment to include the Power Plant in the U.S., or to consider the environmental effects in Canada of the Power Plant.

Secondly, SE2 argued that the wording of subsection 16(1)(a) requires that any consideration of cumulative effects must be within the context of considering the environmental effects of the IPL. This can only occur if the other effects considered are of a nature similar to the effects of the IPL. Unless the effects to be combined are of a similar nature to those from the IPL there is no reasonable limit placed on what the Board can consider. SE2 referred to the findings of the Joint Review Panel in the *Express Pipeline Project*⁶ which determined that in assessing cumulative effects “there must first be an environmental effect of the project subject to assessment.”

SE2 argued that the potential effects of the transmission of electricity through the IPL are different in kind, location and duration from the alleged effects of the combustion of gas in the Power Plant. SE2 referred to a number of affidavits to support this submission and to conclude that the environmental effects of the Power Plant will not be cumulative on the environmental effects caused by the IPL. SE2 submitted that neither the affidavits nor other materials submitted by intervenor applicants create a factual basis for finding the environmental effects in Canada of the Power Plant are cumulative on the environmental effects caused by the IPL. Finally, SE2 argued that none of the materials provided by the parties opposing the Environmental Effects Motion are authority for the proposition that the Board can include, within the cumulative effects assessment of the IPL, projects such as the Power Plant located in a foreign country with environmental effects different in kind, location and duration from the effects of the IPL.

David Suzuki Foundation and the Society Promoting Environmental Conservation

The David Suzuki Foundation (the Foundation) and the Society Promoting Environmental Conservation (SPEC) submitted that the Board has the discretion under section 15 of the CEA Act to scope the project so as to include the effects of the works located in the U.S. They submitted that the “principal project/accessory test” as recommended by the *Responsible Authorities Guide* prepared by the Canadian Environmental Assessment Agency (the Agency) had been endorsed by the Federal Court of Appeal in *Bow Valley Naturalists Society v. Canada*

6 Report of the Joint Review Panel, OH-1-95 (May 1996).

(*Minister of Canadian Heritage*)⁷. Accordingly, it should be applied to determine the scope of the project. Under that test, the physical work of the Power Plant should be included in the scope of the project as the existence of the IPL is totally dependent upon, and integrated with, the plant and the decision to build the IPL makes building the plant inevitable.

In support of its submission that the cumulative effects assessment should include the Power Plant, the Foundation and SPEC referred to the words of the Federal Court of Appeal in *West Country*⁸ in which the court stated:

[O]nce engaged, the federal responsible authority is to exercise its cumulative effects discretion unrestrained by its perception of constitutional jurisdiction.

The Foundation and SPEC also referred to a ruling in *GSX Canada Pipeline Project*⁹ in which the Panel found that it would consider the effects of a U.S. work that will be cumulative with the effects of a Canadian work.

Finally, the Foundation and SPEC submitted that at this stage it is inappropriate to decide what is and is not in the cumulative effects assessment. Which effect is cumulative upon which effect is a decision and a judgment that can only be drawn from the certification hearing once there is a full record of evidence in front of the Board.

City of Abbotsford and the Fraser Valley Regional District

The City of Abbotsford and the Fraser Valley Regional District (Local Governments) adopted the comments of the Foundation and SPEC. They submitted in their written argument that, given the functional integration of the Power Plant and IPL, the common ownership, and management of both facilities and the overall scheme described in the applicant's amended application, there can be no other conclusion than that the Power Plant is to be included in the scope of the assessment to be conducted under the CEA Act.

They further submitted that the evidence from the EFSEC recommendation shows that there will be effects from the Power Plant in Canada and the SE2 application shows that there will be effects from the IPL. Thus, the Board needs to consider both. The Local Governments further argued that the Board should take into consideration the cumulative effects of the Power Plant in combination with the IPL. It was submitted that the Board could only do so by hearing evidence of all potential environmental effects of the Power Plant. Without hearing that evidence, the Board would be unable to determine the cumulative effects under section 16 of the CEA Act. They argued that to the extent that the Board is entitled to consider matters that would normally be within provincial jurisdiction, it should not matter if they came from another country.

7 [2001] 2 F.C. 461 (F.C.A.) [hereinafter *Bow Valley*].

8 *Supra*, note 5 at 254.

9 Joint Review Panel for the Georgia Strait Canada Pipeline Project, GH-4-2001 (Letter: 31 January 2002).

Other Parties

All of the other parties, except the Alberta Department of Energy (Alberta), adopted or supported the submissions of the Foundation and SPEC and the Local Governments. Mr. Peachey also relied on the “principal project/accessory test” in submitting that the Board has the authority to include both the IPL and Power Plant in the scope of the assessment. Mr. McNally also referenced subsection 16(1) of the CEA Act in submitting that the IPL and Power Plant do, in combination, have environmental effects for Canadians.

Reply of Sumas Energy 2, Inc.

SE2 argued that the connection and proximity test, and the principal project/accessory test are really the independent utility test developed under American jurisprudence which was expressly rejected in *West Country*. SE2 submitted that in various cases the affidavit evidence indicates that there would be no effects in Canada of the Power Plant. More importantly, on the evidence, the effects of the IPL and Power Plant are different and cannot be cumulative. SE2 submitted that there is sufficient evidence before the Board in affidavit form for the Board to make a decision with respect to cumulative effects.

1.2 Views of the Board

The Board may consider the environmental effects in Canada of the Power Plant under the CEA Act if the Power Plant comes within the scope of the project that is subject to assessment or if the effects are included in the factors to be considered in the assessment, within the meaning of the applicable provisions of the CEA Act.

Section 15 - Scope of Project

The first step in the environmental assessment process is for the RA to determine the scope of the project under section 15. Subsections 15(1) and 15(3) are relevant to the Board’s determination of this issue:

15(1) The scope of the project in relation to which an environmental assessment is to be conducted shall be determined by

(a) the responsible authority

...

15(3) Where a project is in relation to a physical work, an environmental assessment shall be conducted in respect of every construction, operation, modification, decommissioning, abandonment, or other undertaking in relation to that physical work that is proposed by the proponent or that is, in the opinion of

(a) the responsible authority . . .

...

likely to be carried out in relation to that physical work.

In *Bow Valley*¹⁰, Linden J.A. noted that in regard to scoping:

The Act does not define the process of scoping of the project. Neither does it define the term “scope.” Nor does it provide any direction to the responsible authority in determining which physical works should be included within the scope of the project.

The court made reference to the “principal project/accessory test” as set out in the *Responsible Authority's Guide* as well as the judicial interpretation of subsection 15(3) of the CEA Act and concluded that:

It would thus appear that the “scope” of a project under section 15 is normally limited to undertakings directly related to the proposed physical work, such as its construction and operation, and ancillary or subsidiary undertakings.

The judicial interpretation of section 15 in the cases relied upon by the parties has been concerned with projects in which the activities or undertakings sought to be scoped were all within Canada and as such are not necessarily determinative of the issue in this case. The Board must first consider whether assessments of facilities that are located outside of Canada are contemplated by the CEA Act. If they are, the Board must determine the practical effect of considering them as components of the scoped project.

The scheme of the CEA Act requires that once a project is scoped, certain things are to be done by the RA with respect to the project as scoped. For example, subsection 16(1) requires that the RA consider the factors set out therein in respect of the “project.” Pursuant to section 20, an RA shall, after considering the screening report for the project, including any mitigative measures, determine whether the project would likely cause any significant adverse environmental effects. Where a project is subsequently approved, the RA shall, pursuant to subsection 20(2), ensure that any mitigation measures are implemented. Finally, pursuant to section 38, the RA has a responsibility to design a follow-up program that it considers appropriate and arrange for its implementation.

If the Power Plant were included within the scope of the project, the Board would be obligated to consider the environmental effects of the Power Plant both within Canada and in the U.S. However, the Board would be unable to enforce any mitigation measures within the U.S.; nor would it be able to ensure that any follow-up program was carried out. As these matters would not be within an area of Canadian responsibility, the findings of the Board (in regard to effects *outside* of Canada) would have no binding effect and no useful purpose would be served by their assessment by the Canadian RA.

Consequently, if the scope of the project included the Power Plant, the scheme of the CEA Act would be frustrated as compliance with its requirements would not be possible. Therefore, in the Board's view, the CEA Act does not contemplate that facilities located outside of Canada are to be included within the scope of a project located in Canada. Including the U.S. Power Plant as a component of the scope of the proposed IPL to be located within Canada would, in the Board's

¹⁰ *Supra*, note 7.

view, be beyond the ambit of the CEA Act and therefore outside of the authority of the Board as an RA under the CEA Act.

Subsection 16(1) - Factors to Be Considered

Although the Power Plant would not be within the scope of the project for purposes of the environmental assessment, the Board must consider whether the effects of the Power Plant may be included within the factors set out in subsection 16(1) of the CEA Act.

All screenings must consider the factors described in paragraphs 16(1) (a) to (d), as well as any other factors identified by the RA pursuant to paragraph 16(1)(e):

16. (1) Every screening or comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:

(a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and *any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out*; (emphasis added)

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public that are received in accordance with this Act and the regulations;

(d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and

(e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered.

In accordance with paragraph 16(1)(a) of the CEA Act, the Board must consider “any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out.”

Both *West Country*¹¹ and *Bow Valley*¹² considered the question of how to undertake a cumulative effects assessment. In *West Country*¹³, the Court noted that the consideration of cumulative

11 *Supra*, note 5.

12 *Supra*, note 7.

13 *Supra*, note 5 at para. 34.

effects involves a consideration of effects of both the project as scoped and of the effects from sources outside that scope, unrestrained by a perception of constitutional jurisdiction. This view negates the argument that the wording “in combination with other activities” must relate to other projects or activities over which the Board has jurisdiction. The Court, in *Bow Valley*¹⁴, noted that the effects of the scoped project need be considered only in conjunction with the effects of other projects or activities which have been, or will be, carried out. Uncertain or hypothetical projects or activities need not be considered.

From this case law it is clear that a consideration of the environmental effects of the Power Plant could possibly be included in the Board’s consideration of cumulative effects if the necessary criteria were met. First there would need to be an environmental effect of the project as scoped. That effect must then act in combination with the environmental effects of other projects that have been or will be carried out in order for there to be a likelihood of cumulative environmental effects.

The Board understands SE2’s reply argument on cumulative effects to be that there is sufficient evidence for the Board to conclude that the environmental effects from the Power Plant are different from those of the IPL and therefore consideration of cumulative effects should not be a basis for the Board to conclude that it should hear evidence of the environmental effects of the plant. The Board agrees with SE2 that the Board should not conclude that it has authority under the CEA Act to consider all of the environmental effects of the Power Plant in Canada simply because some of them may, with effects from the IPL, have a cumulative effect.

However, to the extent that the effects from the Power Plant do have the potential to act cumulatively with the effects of the IPL, those effects may be considered. As submitted by the Foundation and SPEC, a determination of cumulative effects can only be made after consideration of all of the evidence after the certificate hearing. Therefore the Board will make its determination under the CEA Act, including matters relating to cumulative effects, based on all of the evidence at the conclusion of the hearing.

2.0 *The National Energy Board Act*

2.1 Submissions of the Parties

Sumas Energy 2, Inc.

SE2 submitted that neither the NEB Act nor its regulations contain any express language enabling the Board to examine facilities or activities outside Canadian borders, to assess their environmental effects within Canadian borders, or to examine public concern within Canadian borders about facilities or activities outside of Canada. SE2 submitted that the Board, in *CanStates*¹⁵, decided that it did not have the jurisdiction to review environmental effects in Canada of U.S. projects.

14 *Supra*, note 7 at para. 41.

15 *Supra*, note 2.

SE2 also referred to the Board's recognition in the *Westcoast Energy Inc. Southern Mainline Project*, Motion Concerning Unanswered Information Requests¹⁶ that other entities have jurisdiction to regulate facilities and their emissions in the areas in which the pipeline gas would be used.

While subsection 58.16(2) of the NEB Act gives the Board authority to consider matters that appear to it to be relevant, SE2 argued that relevancy must be determined with reference to section 2 of the NEB Act and to the *National Energy Board Electricity Regulations* (Electricity Regulations). Section 2 of the NEB Act defines an IPL, while the Electricity Regulations set out the information that an applicant must provide to the Board in an application for an IPL. There is nothing in these provisions that requires an applicant to submit information with respect to related generating facilities.

SE2 argued that none of the cases or materials presented by intervenors are authority for the proposition that the Board can include within its consideration of an application for a certificate for an IPL a physical work or activity located in a foreign country.

Alberta Department of Energy

Alberta adopted the submissions of SE2 that the NEB Act does not give the Board jurisdiction to consider the environmental effects in Canada of the Power Plant in the United States. It also suggested that the specialized and detailed CEA Act is exhaustive and limits the general provisions of the NEB Act with respect to the assessment of environmental effects. Accordingly, if the Board cannot consider the environmental effects of the Power Plant under the specific CEA Act, it cannot consider them under the more general NEB Act.

David Suzuki Foundation and the Society Promoting Environmental Conservation

The Foundation and SPEC submitted that the Board has jurisdiction under the NEB Act to consider the environmental effects of the Power Plant in Canada. They submitted that those effects are relevant to the IPL application because the IPL and the Power Plant are directly linked and form mutually interdependent components of the same undertaking. They then argued that there are no principles of law or policy that would preclude the Board from considering those effects.

The Foundation and SPEC argued that sections 58.16 and 58.35 of the NEB Act direct the Board to consider the future public convenience and necessity of the IPL and the public interest.

Under the NEB Act, the Foundation and SPEC submitted that the Board has established the principle of connection and necessary proximity to guide it in determining the scope of factors relevant to its environmental assessment responsibility. They relied on the Board's decision in *Hydro-Quebec*¹⁷, which was upheld by the Supreme Court of Canada¹⁸. Under this test, if the Board determines that a work or activity is directly connected to and interdependent with the work and activity that is before the Board for approval, the Board considers the environmental

16 National Energy Board, GH-1-2002 (Ruling: 5 September 2002).

17 *Hydro-Quebec* National Energy Board, EH-3-89 (August 1990) [hereinafter *Hydro-Québec*].

18 *Québec (Attorney General) v. Canada (National Energy Board)*, [1994] 1 S.C.R. 159 [hereinafter *Québec*].

effects of that additional work or activity. Although the connection and proximity test was developed in the Canadian context of the division of powers between the federal and provincial governments, this principle applies equally to the Board's power to consider the effects in Canada of a plant in the U.S. They referred to *CanStates*¹⁹ and *Brooklyn Navy Yard Cogeneration Partners et al*²⁰ as cases where this principle was discussed. They also indicated that the principle has been recently applied in *GSX Canada Pipeline Project*²¹.

The Foundation and SPEC cited *Trans Mountain Pipe Line Company Ltd.*²², *Hydro-Quebec*²³, the Board's *GSX* ruling²⁴, and *Interprovincial Pipe Line Ltd. and the National Energy Board*²⁵ in support of the argument that the Board may take into consideration information related to U.S. matters that are outside of the Board's regulatory jurisdiction.

They noted that environmental assessment is an information gathering exercise and not an exercise of regulatory authority and that federal authorities are entitled to consider the broad implications of their decisions as long as the decisions are restricted to matters properly within their jurisdiction.²⁶

The Foundation and SPEC argued that the SE2 case establishing that the IPL is in the public interest rests entirely on the need to meet U.S. regional power demands. They argued that the Board should take into consideration the benefits and the burden of the project including those arising from the Power Plant.

They submitted that the *Brooklyn Navy Yard* and *CanStates* cases²⁷ are distinguishable or wrong in principle if they suggest that the Board cannot look at environmental effects originating outside Canada without explicit authority.

In response to Alberta's submission that the CEA Act, as specific legislation, removes the authority of this Board under the NEB Act to consider environmental matters, the Foundation and SPEC argued that the Electricity Regulations include a definition of the environment thereby confirming the Board's mandate to look at environmental matters independent of the CEA Act.

City of Abbotsford and the Fraser Valley Regional District

The Local Governments adopted the comments of the Foundation and SPEC.

In their submissions, the Local Governments referred to section 58.16 of the NEB Act and stated that the Board must be satisfied that the IPL will be required by the present and future public convenience and necessity. They noted that the Board must have regard to all considerations that appear to it to be relevant. There is no discretion to exclude considerations that the Board finds

19 *Supra*, note 2.

20 National Energy Board, GH-5-93 Review (June 1994) [hereinafter *Brooklyn Navy Yard*].

21 Joint Review Panel for the Georgia Strait Canada Pipeline Project, GH-4-2001 (Ruling: 31 May 2002) [hereinafter *GSX*].

22 National Energy Board, OH-1-79 (January 1980) [hereinafter *Trans Mountain*].

23 *Supra*, note 17.

24 *Supra*, note 21.

25 (1977), 78 D.L.R. (3rd) 401 (F.C.A.) [hereinafter *Interprovincial*].

26 *GSX*, *supra*, note 21 and *Hydro-Quebec*, *supra*, note 17.

27 *Brooklyn Navy Yard*, *supra*, note 20 and *CanStates*, *supra*, note 2.

relevant. The Board is given a broad discretion to determine what it considers to be relevant and is not limited to considerations under federal jurisdiction or within Canada.

They submitted that the Board could take direction from the *Hydro-Quebec*²⁸, *GSX*²⁹, and *TransMountain*³⁰ cases, as well as *Friends of the Oldman River Society v. Canada*³¹. They submitted that the duty of the Board is to consider and protect the public interest, which requires consideration of the effects in Canada of the Power Plant.

The Local Governments cited *Quebec*³² as authority for the proposition that section 58.16 of the NEB Act should not be interpreted so narrowly as to render the function of the Board meaningless or ineffective. The Local Governments further argued that the Board's statutory authority and functional integration on linkages issues in the present case were similar to those in *GSX*³³. There the Board looked at the interdependence between a pipeline and a power plant and considered the costs and benefits associated with the undertaking. The Board should do the same in this application.

The Local Governments submitted that the basic point from *Brooklyn Navy Yard*³⁴ is that there must be a necessary connection together with an element of proximity and ascertainability in reviewing the effects of a plant or an undertaking. The Local Governments further relied on *Brooklyn Navy Yard*³⁵ for the proposition that the Board may, in considering environmental effects in areas of federal jurisdiction, take into consideration environmental assessments carried out by a province. Nevertheless, they stated that the Board must reach its own conclusion.

The Local Governments also relied on the Supreme Court of Canada decision in *Westcoast Energy v. Canada*³⁶ with respect to federal jurisdiction. There the Court found that works, integrated through a transmission pipeline, constituted a single federal work or undertaking. The Local Governments submitted that the test for the Board is clear: Are the power plant and IPL so integrated that the two undertakings are interdependent and under common control? *Crown Zellerbach Canada Ltd.*³⁷ and *Oldman River*³⁸ were also relied on by the Local Governments to support the proposition that the Board may look at effects that are extra-provincial and international in character. They went on to argue that, therefore, the international boundary is irrelevant to the test to be considered by the Board because the issue is framed in terms of identifying the Board's jurisdiction.

Province of British Columbia

The Province of British Columbia (B.C.) argued that, in the unique circumstances of this case, it is appropriate for the Board to consider the environmental effects of the SE2 Power Plant as part

28 *Hydro-Quebec, supra*, note 17.

29 *Supra*, note 21.

30 *Supra*, note 22.

31 [1992] 1 S.C.R. 3 [hereinafter *Oldman River*].

32 *Supra*, note 18.

33 *Supra*, note 21.

34 *Brooklyn Navy Yard, supra*, note 20.

35 *Brooklyn Navy Yard, supra*, note 20.

36 [1998] 1 S.C.R. 322.

37 [1988] S.C.J. No. 23.

38 *Supra*, note 31.

of its consideration of the IPL. B.C. identified three unique circumstances. First, this is the first time that a U.S. electrical generator has sought to connect to the BC Hydro grid via a dedicated IPL. Second, there is no forum in Canada, other than the Board, to review the IPL or the environmental effects of the SE2 Power Plant. Third, the Power Plant poses a real threat to the health of the people in the Fraser Valley.

Other Parties

Most of the other parties adopted the submissions of the Foundation and SPEC, the Local Governments and other speakers who opposed the motion. The common thread throughout the submissions was that the public interest requires an examination of the effects of the Power Plant in Canada. Mr. Welsh on behalf of the University College of the Fraser Valley submitted that the IPL is not a separate entity and that it would be prudent to err on the side of caution. Thus any decision on the IPL should be based on all evidence that could potentially affect the public so that any error that may be made in the decision would have been totally unforeseen.

Mr. Ferguson and others submitted that the NEB hearing into the IPL was the only Canadian forum in which the effects of the Power Plant on Canadians could be heard.

Ms. Hoekstra submitted that the IPL and Power Plant are one project, and if both were located inside Canada, they would constitute one project for the purposes of an environmental assessment. She argued that the reasons in the *GSX* decision apply in this case and that the Board's first responsibility is to Canadians.

Ms. Moore-Edwards submitted that, if only the environmental effects of the IPL are considered, the Board would not have all of the information to make an informed decision. Mr. Van Dongen submitted that there are a number of unique aspects of this case that make it both reasonable and appropriate for the Board to consider the environmental effects of the Power Plant. These are:

- 1) this is the first instance of a U.S. plant wanting to connect to the B.C. Hydro power grid;
- 2) the unique geography of the Fraser Valley and the proven sensitivity of the airshed;
- 3) the absence of any other Canadian process to consider the environmental effects of the Power Plant;
- 4) the potential health and environmental impact of a large, new, single point source which will be irreversible and could have a life of 30 years or more;
- 5) the total lack of Canadian regulatory authority on the future maintenance, operation, and environmental performance of the SE2 plant;
- 6) the fact that B.C. made a decision seven years ago not to build a similar new Power Plant in this airshed, then, or in the future; and

- 7) the strong and direct linkage made by SE2 itself between its proposed U.S. Power Plant and an IPL proposed for Canada.

Mr. Van Dongen argued that in the circumstances of this case, it would be contrary to the public interest if the environmental effects of the Power Plant were not considered in Canada as part of this process. The submissions of many other parties concurred with many of these points.

Stó:lō Nation

The Stó:lō Nation raised concerns about the possible impacts on fish as a result of the water used to cool the plant discharging into the Abbotsford sewer and then ultimately into the Fraser River. In addition, the Stó:lō Nation raised concerns with the extra million litres of water a day coming out of the aquifer, heavy metals coming into the water system from the plant discharge, and particulates in the air.

The Stó:lō Nation requested that the Board consider section 35 of the *Constitution Act* and include the First Nations perspective because the IPL and the Power Plant are one and the same project. The National Energy Board should consider the environmental impacts on First Nations and Canadians.

The Stó:lō Nation stated that the Crown has not met its obligation to consult with First Nations. It went on to state that the Crown is obligated to try and find a way to work with First Nations and make sure that all of their concerns are dealt with.

2.2 Views of the Board

Section 58.1 of the NEB Act provides that either a permit or a certificate is required to construct or operate an IPL. SE2 has elected under section 58.23 to have federal law apply and thus requires a certificate to construct and operate the IPL.

Under subsections 58.16 (1) and (2), the Board must be satisfied that the line “is and will be required by the present and future public convenience and necessity” and in so doing “shall have regard to all considerations that appear to it to be relevant.” The Board has a wide discretion as to what it considers to be relevant so long as it exercises that discretion in good faith.

SE2 cited the Board’s decision in *CanStates*³⁹. In that case, the applicant was seeking a natural gas export licence. An intervenor requested that the applicant produce an environmental impact statement for a power plant in Washington State that would be fueled by the gas to be exported. The applicant objected. At issue were the greenhouse gas emissions that would result from the combustion of the gas by the power plant and the impact of those emissions on the global commons. The Board considered the narrower issue of whether it had jurisdiction to consider the environmental effects on federal areas of jurisdiction of the end use of the gas in the U.S.

The Board first examined its jurisdiction under the EARPGO, which has now been replaced by the CEA Act. It found that the only reference to matters outside of Canada in the EARPGO was a provision allowing the review of environmental effects that moved from Canada to another

39 *Supra*, note 2.

nation. There was no explicit direction to consider effects that migrated into Canada. The Board stated that, if Parliament had intended the Board to consider environmental effects migrating into Canada, it would have done so explicitly. It therefore concluded that there was neither explicit nor implicit authority under the EARPGO to consider these effects.

The Board went on to note that the NEB Act did not establish any explicit jurisdiction to look at environmental effects from outside Canada. The Board stated therefore that it reached the same conclusion on the NEB Act as it reached on the EARPGO.

In *CanStates*⁴⁰ the Board did not examine the connection that existed between the gas export licence and the environmental effects migrating into Canada and did not examine whether a direct connection would render those effects relevant to its considerations. Although the Board, for the purpose of its analysis in that case, considered the effects on areas of federal jurisdiction, the real issue was greenhouse emissions that have world-wide, rather than local, effects.

In this case, the close connection between the Power Plant and the IPL is recognized by the Board. In addition, the concerns raised by intervenors are specific to environmental effects such as those that may affect air quality within their local communities rather than effects on the more amorphous global commons.

The Board notes that, in the past, it has considered matters that have occurred outside of Canada when they have been found relevant to the decision that the Board was required to make under the NEB Act.

In *Interprovincial*⁴¹, the court held that the Board had the implied authority to require the applicant to produce information from a foreign subsidiary. The Board ordered Interprovincial Pipe Line Ltd. (Interprovincial), in a rate hearing, to file certain information related to a U.S. subsidiary. Interprovincial obtained leave to appeal to the Federal Court of Appeal on the issue of whether the Board had the jurisdiction to require it to file financial information not already in existence related to the operation of the subsidiary. Although there was no express authority in the NEB Act for the Board to make this order, the Federal Court of Appeal concluded that the power existed by necessary implication from the nature of the Board's regulatory authority.

The Board considered effects from outside of Canada in *Trans Mountain*.⁴² There the Board determined that the environmental effects in Canada of oil tanker traffic from Alaska to Washington state, and from the port operation in the U.S. where the oil was to be unloaded, were issues having a bearing on the overall public interest regarding an oil pipeline in Canada proposed by Trans Mountain Pipe Line Company Ltd. as part of the overall project.

SE2 suggested that *Trans Mountain*⁴³ conflicts with *CanStates*⁴⁴ and that it should not be considered as authority for the Board holding that it has jurisdiction to consider environmental effects from outside Canada since the Board did not seem to address the issue of jurisdiction in a complete fashion.

40 *Ibid.*

41 *Supra*, note 25.

42 *Supra*, note 22.

43 *Ibid.*

44 *Supra*, note 2.

However, the Board clearly indicated in *Trans Mountain* that, although it did not have jurisdiction to regulate the tanker traffic or the port, it had the jurisdiction to consider matters related to them in exercising the jurisdiction that it did have over the pipeline, as being relevant to the decision that the Board was to make.

The Board has also decided that it will consider the environmental effects of facilities subject to provincial jurisdiction. In *GSX*⁴⁵, the Applicant has applied for a certificate for a natural gas pipeline. In a motion before the Joint Review Panel, the Panel was asked to consider whether it should hear the evidence about environmental effects of the combustion of the gas in a proposed power plant to be located in B.C. In its ruling, the Joint Review Panel concluded that consideration of those effects from a power plant directly linked to the pipeline would be relevant to the Panel's decision.

Notwithstanding that the Power Plant would be regulated by B.C., the Panel concluded that it had the authority to consider those effects. The Panel made it clear that it did not consider that this was an attempt to regulate the provincial facility. In making this decision, the Joint Review Panel relied upon several cases including *Oldman River*⁴⁶ and *Quebec*⁴⁷.

The Board does not see a distinction between considering the effects of facilities that are within provincial jurisdiction and those of facilities under U.S. jurisdiction. In neither case is the Board attempting to regulate anything outside of its jurisdiction. Where there is a sufficient connection between those facilities and the project over which the Board has licensing authority, it is simply considering relevant matters that relate to its regulatory jurisdiction. If those matters are relevant to the Board's decision, the Board has the authority to consider them.

The Board notes that, in SE2's Further Direct Evidence, it submitted evidence of the direct economic benefits in Canada of the IPL. Included are over \$180 million per year of natural gas payments related to fueling the Power Plant. The Board is being asked to consider the possible benefits in Canada of the Power Plant as part of its consideration of the IPL but is being asked to disregard possible burdens in Canada from the operation of the Power Plant. The Board considers that it is as appropriate to consider the possible burdens in Canada as it is to consider the possible benefits.

SE2 suggested that, while subsection 58.16(2) of the NEB Act gives the Board authority to consider matters that appear to it to be relevant, relevancy must be determined with reference to the definition of "international power line" found in s. 2 of the NEB Act. The definition, SE2 submitted, does not permit an expanded consideration by the Board of matters apart from international power lines. In addition, the Electricity Regulations do not require an applicant such as SE2 to submit information with respect to related generating facilities.

In *Quebec*⁴⁸, the Board had taken into consideration matters that previously had been specifically included in the NEB Act but which had been removed by Parliament. The Court confirmed that

45 *Supra*, note 21.

46 *Supra*, note 31.

47 *Supra*, note 18.

48 *Ibid.*

the Board's authority to consider matters that were relevant gave it the power to consider matters that were not specifically set out in the NEB Act.

The Federal Court of Appeal in *Nakina (Township) v. Canadian National Railway Co.*⁴⁹ considered the scope of what is included in the public interest. In this case, the Canadian Transport Commission, through a committee, held hearings regarding the closing of a railway station in Nakina Township. Nakina presented evidence of the negative effects of the closure on the economy of the region. The Commission decided that it was not entitled to consider these effects since the legislation that it operated under only mentioned technical operation, safety and service.

The Court noted that the Commission acknowledged that it was required to have regard for the public interest and stated:⁵⁰

I would have thought that, by definition, the term "public interest" includes the interests of all the affected members of the public. The determination of what is in the public interest involves the weighing and balancing of competing considerations. Some may be given little or no weight; others much. But surely a body charged with deciding in the public interest is "entitled" to consider the effects of what is proposed on all members of the public. To exclude from consideration any class or category of interests, which form part of the totality of the general public interest, is accordingly, in my view, an error of law justifying the intervention of this Court.

Regarding the specific matters set out in the legislation, the Court said:⁵¹

[W]hile the Commission may have the jurisdiction, in the public interest, to regulate questions of technical operation, safety and service, those fields of jurisdiction do not themselves constitute either a limitation or a definition of what the public interest is, either generally or with regard to any particular case.

If evidence is relevant to the determination of the question of public interest, it must be admitted and considered.

Accordingly, the Board does not consider that the absence of any specific reference in the NEB Act, or its regulations, to a matter that the Board otherwise considers relevant in any way restricts the Board from considering that matter.

The Board considers that the Power Plant and the IPL are interlinked. Without the Power Plant, there would be no need for the IPL. If the IPL were not built, the Power Plant might not proceed. The IPL would have no other function than to transmit all of the electrical output of the Power Plant. The two undertakings would in fact be components of a single enterprise. Any benefits or

49 [1986] F.C.J. No. 426 (F.C.A.) [hereinafter *Nakina*].

50 *Ibid.*

51 *Ibid.*

burdens that would arise from the IPL itself are clearly relevant considerations in determining the Canadian public interest. In the Board's view, any burdens (as well as any benefits) that might be felt in Canada from the Power Plant are directly linked to the IPL and are, therefore, similarly relevant. Accordingly, the Board has concluded that it has the authority under the NEB Act to consider the environmental effects in Canada from the Power Plant in Washington, as a matter relevant to its determination of whether the proposed IPL is in the Canadian public interest.

Regarding the issue of Crown consultation raised by the Stó:lō Nation, the Board is of the view that this issue is not relevant to the specific questions raised by this motion.

However if the Stó:lō Nation wishes to raise this issue in the course of the proceeding to consider SE2's IPL application, the Board would expect that they would provide evidence of the nature of the rights which they assert and the potential infringement of those rights which may result from any approval of the Project.

C. SHOULD THE BOARD CONSIDER ENVIRONMENTAL EFFECTS OF THE POWER PLANT

Having found that the Board has the authority under the NEB Act to consider the environmental effects from the plant in Washington, the question is "should the Board do so in this case?"

SE2 and Alberta have raised a number of matters that suggest that the Board should not consider these effects. These fall into three groups:

- Those relating to the nature and extent of the environmental review of the Power Plant that was conducted in Washington State;
- The international aspects, including comity, extra-territoriality and NAFTA; and
- Matters related to the Canada-U.S. electricity market.

The Board will summarize the submissions of the parties on each of these groups of issues and will then give its views with regard to all of them.

1.0 *Environmental Review in Washington State*

1.1 Submissions of the Parties

Sumas Energy 2, Inc.

SE2 said that it would be inappropriate for the NEB to conduct a review of the environmental effects in Canada of the Power Plant because to do so would duplicate the review that was conducted by EFSEC and would, therefore, be of no utility. SE2 submitted that EFSEC has already conducted an extensive environmental assessment of the Power Plant and, with substantial Canadian input, has considered the environmental effects in Canada of the Power Plant.

Alberta Department of Energy

Alberta submitted that EFSEC has jurisdiction over the Power Plant. Therefore, the proper forum for both Americans and Canadians to raise their concerns was the EFSEC hearing. Alberta argued that, as EFSEC had a substantial connection with the plant and conducted its hearing in accordance with the rule of law, the Board should not second-guess or rehear a decision made by EFSEC.

David Suzuki Foundation and the Society Promoting Environmental Conservation

The Foundation and SPEC argued that the Board cannot lawfully delegate an examination of the environmental effects to EFSEC unless expressly authorized to do so and there is no such authorization.⁵²

City of Abbotsford and the Fraser Valley Regional District

The Local Governments submitted that the Board, in looking at the Power Plant, is entitled to consider the decision of EFSEC but it does not replace the Board's obligation to reach its own conclusion. They further submitted that many of the concerns that led to EFSEC's denial in 2001 of the SE2 Power Plant application (EFSEC Order 754) continue to exist and appear not to have been addressed by EFSEC in its subsequent decision to approve the plant in 2002 (EFSEC Order 768). The Local Governments argued that the EFSEC decision did not adequately deal with the issues that were before it.

Other Parties

Many of the other parties adopted the submissions of the Foundation and SPEC and the Local Governments on this issue. A number of parties raised concerns about their ability to participate in the EFSEC hearings and were concerned that issues affecting Canadians were not adequately addressed by EFSEC in its decision. Ms. Hoekstra submitted that EFSEC Order 768 regarding the Power Plant does not mention Canadians' concerns.

2.0 *International Comity, Extra-Territoriality and NAFTA*

2.1 *Submissions of the Parties*

Sumas Energy 2, Inc.

SE2 relied on the Supreme Court of Canada cases of *Morguard Investments Ltd. v. Savoye*⁵³ and *Tolofson v. Jensen*⁵⁴ to establish the applicable principles of international comity under which nations are hesitant to exercise jurisdiction over matters that may take place in the territory of other nations.

⁵² See *Trans Mountain*, *supra*, note 22.

⁵³ [1990] 3 S.C.R. 1077 [hereinafter *Morguard*].

⁵⁴ [1994] 3 S.C.R. 1022 (S.C.C.).

SE2 referred to two decisions of the Board⁵⁵ in which, according to SE2, the Board recognized that international comity required it to rely on U.S. regulators to guard against the environmental impacts of U.S. facilities in Canada.

SE2 argued that an environmental assessment of the effects in Canada of the U.S. Power Plant, when the plant has been subject to a rigorous assessment in the U.S. addressing Canadian issues, is inconsistent with the principle of international comity.

SE2 argued that Canadian influence on decisions such as EFSEC in the U.S. should be through international agreement.

Alberta Department of Energy

Alberta argued that the principles of international comity and the provisions of NAFTA dictate that the Board should not consider the environmental effects of the Power Plant in Canada and echoed the arguments made by SE2.

Although Alberta did not submit that NAFTA necessarily applies to this matter, it did suggest that considering the environmental effects of the Power Plant in Canada would be treating SE2 less favourably than the Board has, in the past, treated Canadian applicants. This is so since the Board would be considering the environmental effects of a facility in another jurisdiction that has already undergone a full environmental review by the appropriate authority in that jurisdiction. For this reason the Board should not consider those effects.

Alberta submitted that the Board should not attempt to extend its policies into the jurisdiction of another country. Therefore, the Board should confine its assessment to the environmental impacts of the IPL and should respect the decisions that have been made by EFSEC regarding the Power Plant.

David Suzuki Foundation and the Society Promoting Environmental Conservation

The Foundation and SPEC argued that comity does not operate so as to compel one nation to sit still and accept injurious actions taken within another nation or to facilitate that injury by accepting, without question, works that will assist in perpetrating the harm.⁵⁶

With regard to Alberta's positions on NAFTA, the Foundation and SPEC submitted that Alberta had not established that NAFTA is relevant.

The Foundation and SPEC submitted that the issue is not whether the Board has the ability to regulate but rather its ability to consider certain environmental effects and this does not offend the principle of extraterritoriality.

55 See *Brooklyn Navy Yard*, *supra*, note 20 and *CanStates*, *supra*, note 2.

56 See *Libman v. the Queen* (1985), 21 C.C.C. (3d) 206 and *Trail Smelter Arbitration*, (1941), 3 U.N.R.I.A.A. 1938.

City of Abbotsford and the Fraser Valley Regional District

The Local Governments addressed the comments by SE2 that this is a matter for Parliament to consider via international agreement by arguing that, while this may be desirable, it does not mean that the Board does not have authority to, or should not, consider the effects of the Power Plant. By the time any agreement is in place, the plant would be operating.

The Local Governments submitted that there is nothing in this matter to trigger NAFTA.

Other Parties

Many of the other parties opposed to the motion adopted the submissions of the Foundation and SPEC and of the Local Governments in respect of these issues.

Reply of Sumas Energy 2, Inc.

In reply to the Foundation and SPEC's argument, SE2 submitted that the determination of legal issues by EFSEC was a positive exercise of adjudicative authority that triggers comity in this case.

3.0 *Canada-U.S. Electricity Markets and Related Matters*

3.1 *Submissions of the Parties*

Sumas Energy 2, Inc.

SE2 asked that the Board exclude consideration of the effects in Canada of the Washington plant based on the degree of integration that exists between the Canada and the U.S. electricity markets, the importance of the U.S. electricity market to Canada and the possibility that the Board's review might result in U.S. authorities deciding to review Canadian facilities.

SE2 argued that the Board is being urged by intervenors to conduct an assessment of the effects in Canada of the Power Plant situated in the U.S. with a view to possibly preventing that plant from operating. This is in circumstances where the Board has before it an application for approval to construct and operate an IPL to provide access to the power grid that serves eleven U.S. states as well as British Columbia and Alberta. SE2 submitted that this approach is inconsistent with furthering an integrated transmission system and goes against other trends and requirements in electricity transmission. For this reason, SE2 argued that the Board should not consider the environmental effects in Canada of the Power Plant. SE2 cited various Board publications in support of this argument.

SE2 also argued that the export and import of electricity with the U.S. provides a major source of revenue for Canadians. This requires access to U.S. transmission lines. It would be inconsistent with the trend to greater transmission integration and open access for the Board to embark on a process that could result in the denial of access to transmission facilities due to the effects in Canada of the Power Plant. According to SE2, this is a reason that the Board should not consider the environmental effects in Canada of the Power Plant.

Finally, SE2 suggested that an effect of the Board considering the environmental effects in Canada of the Power Plant in the U.S. could be that U.S. regulators would assess the effects in the U.S. of Canadian Power Plants and other sources of electrical generation. SE2 said that this would raise complexities, result in costs and delays of regulatory approvals and would be an unwanted development for Canadians.

SE2 submitted that, for these reasons, even if the Board has the authority to consider the environmental effects in Canada of the Power Plant in the U.S., it should not do so.

David Suzuki Foundation and the Society Promoting Environmental Conservation

In response to SE2's argument regarding the integration between utilities operating in the Western power market, the Foundation and SPEC submitted that the argument concerning these issues can only be made after all the evidence is in at a certification hearing.

The Foundation and SPEC also argued that there is an internal contradiction with SE2's argument. They submitted that while SE2 was urging the Board to have regard to orders made by a U.S. regulatory body that have an effect in Canada, it was at the same time saying that the Board cannot examine matters within the U.S.

City of Abbotsford and the Fraser Valley Regional District

Regarding SE2's submissions on the integrated nature of the electricity markets, the Local Governments submitted that the evidence is not clear about the benefits that an integrated market provide.

4.0 Views of the Board

The Board understands that EFSEC's mandate⁵⁷ is to review the Power Plant and decide whether it is in the public interest of the State of Washington. In doing so, it looks at the benefits and burdens of the Power Plant from that perspective. EFSEC may have given some consideration to environmental effects of the Power Plant in Canada, but not for the purpose of upholding the Canadian public interest.

57 The Energy Facility Site Evaluation Council, in Order No. 768 at 17-18, described its mandate as follows:

EFSEC was created to assist the Governor to decide which proposed locations are appropriate for the siting of large new energy facilities. Chapter 80.50 RCW. The Legislature has recognized that the selection of sites will have a significant impact on the welfare of the population, the location and growth of industry, and the use of the natural resources of the state. It is the policy of the state of Washington to recognize the pressing need for increased energy facilities, and to ensure through available and reasonable methods, that the location and operation of such facilities will produce minimal adverse effects on the environment, ecology of the land and its wildlife, and the ecology of state waters and their aquatic life. RCW 80.50.010.

...The Council has a comprehensive mandate to balance the need for abundant energy at a reasonable cost with the broad interest of the public. RCW 80.50.010. The Council is charged to protect the health of citizens and recommend site approval for power plants where minimal adverse effects on the environment can be achieved. RCW 80.50.010; *see also* WAC 463-47-110.

The Council is also charged with the responsibility to apply the laws of Chapter 43.21C RCW, the State Environmental Policy Act (SEPA), which provides for the consideration of probable adverse environmental impacts and possible mitigation. WAC 463-47-140.

In this matter, the Board is charged with making a regulatory decision on whether the IPL, a facility within Canada, is in the Canadian public interest. Having determined that the environmental effects in Canada of the Power Plant are relevant to that public interest, it is the Board's view that it is proper for it to consider those effects in balancing the benefits and burdens of the IPL.

Its consideration of these effects would not purport to question the validity or effect of the EFSEC order in the State of Washington. The Board's final decision on SE2's application (whether it be to approve or deny the application) will itself have effect exclusively with respect to matters within Canada's borders.

The Board has concluded, therefore, that no issues arise with respect to either extra-territoriality or international comity.

Alberta argued that NAFTA considerations should influence the Board to refrain from exercising its authority to consider the environmental effects in Canada of the plant in the U.S. In the Board's view, the relevancy of these effects outweighs any concerns about NAFTA in the absence of authority that NAFTA directly applies.

The Board considers that matters regarding the integrated electricity market may be relevant to its consideration of the IPL and could impact the Canadian public interest. However, they do not constitute a basis for the Board to refuse to consider the environmental effects in Canada arising from the Power Plant. Indeed, these matters cannot be considered in isolation from other matters that are in the public interest.

Finally, the Board is not persuaded that the possible U.S. review of Canadian environmental effects migrating into the U.S. is a reason for not considering the environmental effects in Canada of the Power Plant.

D. CONCLUSION

The Board considers that there is a direct connection between the Power Plant that SE2 proposes to build in Sumas, Washington and the IPL through Abbotsford, B.C. for which it has applied to the Board for a certificate. Because of this direct connection, the environmental effects in Canada of the plant are relevant considerations to SE2's application before the Board.

The Board therefore concludes that it has the authority under the NEB Act to consider these environmental effects and that there is no reason for the Board to refrain from exercising that authority.

The Board has also concluded that the CEA Act does not contemplate that facilities located outside of Canada are to be included within the scope of a project located in Canada. Therefore, the Power Plant will not be included within the scope of the IPL project. The question of whether the effects from the Power Plant have the potential to act cumulatively with the effects of the IPL will be considered further during the hearing as part of the Board's cumulative effects assessment under the CEA Act.

The list of issues will be amended by adding the following issue:

The environmental effects in Canada of Sumas Energy 2, Inc.'s proposed power plant located in the State of Washington

1 Apr 2003 Board clarification on its use of consultants and Ruling on Mrs. Kamp's motion to deny SE2's application

The National Energy Board issued a letter dated 14 March 2003 in which it disclosed information about consultants that had been or may be retained by the Board with respect to this proceeding. The Board has received comments from: [various parties listed]

These comments raise questions about the Board's use of consultants. Accordingly, the Board is clarifying why and how it uses consultants.

The comments of parties raised other matters. Mrs. Sarah Kamp included a motion that the IPL application be denied. Murdy & McAllister raised concerns about AMEC Earth and Environmental Limited and certain of its staff. The Board will also address these matters in this letter.

The Board's Use of Consultants

The National Energy Board is an expert tribunal that carries out quasi-judicial functions related to its mandate. The Board also relies upon its staff to provide technical knowledge to assist in assessing applications. When that knowledge or expertise is unavailable internally, the Board typically retains consultants with the necessary expertise. Board staff and consultants generally provide technical assistance to Board Members by reviewing the evidence, assisting in the preparation of information requests and hearing questions and drafting certificate conditions. Consultants may also provide technical assistance to Board staff, in the course of assisting Board Members in drafting their Reasons for Decision.

Neither Board staff nor consultants conduct project-related studies, prepare reports or otherwise provide evidence. Accordingly, staff and consultants do not respond to information requests and are not presented for cross-examination. The determination of the need for information requests and the final assessment of the evidence are decisions for the Board Members alone. The Board Members' decisions are made entirely on the evidence that the parties present on the public record during the proceedings.

The Board hires consultants based upon their technical capabilities in a required discipline. Consultants are not necessarily disqualified just because they may have provided advice to certain parties in the past; however, before being retained, the Board requires that they disclose dealings they may have had with the parties to the particular proceeding and in the course of other proceedings currently before the Board. The Board makes inquiries to satisfy itself that such dealings would not affect the consultant's ability to provide objective analysis. In situations where there have been prior dealings between the consultant and any other parties or where such dealings subsequently occur, the Board discloses them to allow parties to comment as it did in

this instance in the 14 March 2003 letter. The Board considers those comments in deciding whether to proceed to use, or continue to use, a particular consultant.

As a general rule, the Board only discloses its use of consultants where it determines that there may be circumstances that could raise a concern about the independence or objectivity of any particular consultant.

Mrs. Sarah Kamp Motion

Mrs. Kamp's motion to deny the IPL application was based on the misapprehension that the consultants hired by the Board would be conducting a study of their own. As the consultants hired by the Board will not be conducting a study, Mrs. Kamp's motion is dismissed.

AMEC Earth and Environmental Limited (AMEC) Contract

In its 14 March 2003 letter, the Board disclosed information pertaining to AMEC and work it has done for parties to the EH-1-2000 proceeding and one other proceeding currently before the Board. Murdy & McAllister have requested information about employees of AMEC who may have worked previously for a company that was involved in the preparation of SE2's IPL application.

Board staff have made enquires of AMEC and have been advised that AMEC's Calgary office currently employs four former employees of URS-Norecol Dames & Moore (URS). URS assisted in the preparation of the SE2 application. These four individuals were hired by AMEC in February 2003.

AMEC has advised that none of the four former URS employees was involved, in their former employment, in working on the SE2 power project or on any proposal work that may have led to that project.

Despite the fact that these employees were not involved with the SE2 project, out of an abundance of caution, AMEC has assured the Board that none of those four employees will be involved in the conduct of the contract with the Board. AMEC will also take internal steps to ensure that none of those employees will have access to the files related to the Board contract.

The Board therefore intends to proceed to contract with AMEC for the provision of technical analysis in air quality and health effects issues for the EH-1-2000 proceeding.

31 May 2003 Ruling on SE2 objection to Mr. Cox's expert testimony during oral presentation¹

[Mr. James Raymond Cox, in his oral presentation, said that he considered himself an expert in the field of real estate. He then indicated that he wanted to speak on, among other things, esthetic affects of the IPL on property values. SE2 objected to this as expert evidence for which no prior report had been filed.]

¹ Transcript EH-1-2000, 15 May 03, Vol. 15, para. 18695-18705.

I want to begin by reminding everyone, as we have discussed on a number of previous occasions, that as a court of record, the National Energy Board is bound by the rules of natural justice. Essentially these rules mean that we must be fair to all parties.

One of the requirements of the rules of natural justice is that a party present its case in advance and that all other parties have an opportunity to reply.

SE2 has presented its case in advance, and one of the purposes of this hearing is to provide the intervenors with the opportunity to challenge SE2's case. SE2 is equally entitled to have the case of the intervenors presented in advance so that it, too, has an opportunity to challenge that case.

Many intervenors have presented their case in advance, and we will move to intervenor panels at a later stage when SE2 will have an opportunity to cross-examine them.

Some parties have, however, not presented evidence in advance, but the panel thought in the interest of providing a full opportunity to the public to participate, we would try this session where those intervenors who have not presented evidence in advance, could present their view on the project. But the opportunity was never intended to provide an opening for parties to introduce new evidence that SE2 has not had the opportunity to see in advance.

I want to emphasize that the process that we are engaged in today is an exception to the normal process, intended to provide intervenors with an opportunity that would not otherwise be open to them until SE2 had presented all of its case.

We do not agree that the matter go simply to the question of weight, we think it goes to fundamental fairness to the Applicant.

We will proceed with the presentations, but there will have to be some constraints. Intervenors making their presentations this morning can speak to their concerns about the project; they can present their concerns based on their personal experience; and they can, of course, comment on the evidence that has been filed.

In these presentations, however, intervenors cannot introduce new documents that are not on the record, and they cannot give any expert evidence.

So subject to those limitations, we will proceed with the presentations. I appreciate that it may be difficult for some intervenors to draw a distinction between their personal experience and their expertise, but I will try and guide them as we go along.

So subject to that, Mr. Cox, if you wanted to proceed with your presentation, you could do so now.

12 Jun 2003 Ruling on SE2's Motion to disregard Environment Canada's advice regarding bird strikes and to retain an independent consultant regarding bird strikes

Mr. Godsoe, on behalf of SE2, has brought a notice of motion asking the Board:

1. To disregard the advice of Environment Canada related to potential bird strikes of the IPL contained in its letters of 19 January 2001 and 17 April 2003, and
2. To retain an independent consultant to review the issue of potential bird strikes.

By letter dated 19 January 2001, Exhibit D-4-7, Environment Canada provided comments from the Canadian Wildlife Service concerning the potential incremental increase in trumpeter swan and other large bird strikes on the above-ground portion of the IPL. Environment Canada recommended that two conditions addressing bird strikes be included in any approval that the Board may issue. It also indicated that its comments were meant to fulfill Environment Canada's obligations under subsection 12(3) of CEAA, which reads:

Every federal authority that is in possession of specialist or expert information or knowledge with respect to a project shall, on request, make available that information or knowledge to the responsible authority...

The issue of bird strikes was subsequently raised in the Board's Information Request No. 3.12. In its response to that Information Request, SE2 offered possible mitigation measures to deal with bird strikes but not those recommended by Environment Canada.

In a letter dated 17 April 2003, Exhibit D-4-11, Environment Canada commented on SE2's response to Board Information Request No. 3.12 and indicated that the Canadian Wildlife Service was available to meet with SE2 to discuss details of an appropriate bird mortality monitoring program to identify appropriate compensation.

Mr. Godsoe submits that the 17 April 2003 letter evidences a bias in Environment Canada against the power plant and that this bias extends to the IPL. He suggests that the bias is evident from the first paragraph of the letter, which reads:

The Honourable David Anderson, Minister of the Environment, has stated our opposition to the location of this project at Sumas and increased air pollution in the Fraser Valley. As noted in our February 11, 2003, letter of comment [Exhibit D-4-9] to the Board, Environment Canada believes that polluting 'up to a limit' is not acceptable and that the best strategy is to continuously improve air quality.

SE2 submits that this paragraph colours Environment Canada's advice concerning measures to be taken to avoid the possibility of bird strikes and calls into questions its reliability and its technical and scientific accuracy. Accordingly, he submits that the Board should disregard both of the letters dealing with potential bird strikes.

SE2 further requests that the Board proceed under subsection 18(2) of the *Canadian Environmental Assessment Act* (CEAA) to engage an independent consultant to review the bird strike issue in order to increase the technical and scientific accuracy of the environmental assessment.

The Board invited comment from intervenors. Mr. Yardley, on behalf of the Government Intervenor, suggested that Environment Canada should have some opportunity to determine whether or not it wishes to respond. Mr. Keith Pincott and Mr. Randy White concurred in this suggestion.

In reply, Mr. Godsoe emphasized that Environment Canada was not a party to this proceeding.

Views of the Board

The Board, in this proceeding, will determine whether the IPL proposed by SE2 will be in the public convenience and necessity under the provisions of the *National Energy Board Act*. It will also be fulfilling its responsibilities under CEAA to ensure that an environmental assessment of the project has been completed and a screening report prepared. The Board will consider all of the evidence and information that is received through this proceeding to prepare the screening report and then to make its decision on the IPL.

As a quasi-judicial tribunal, the Board is required to follow the rules of natural justice and fairness. It must be unbiased in its consideration and afford all parties an opportunity to be heard.

Government departments, such as Environment Canada, can participate in the Board's process either by applying to be an intervenor and filing evidence or by filing letters of comment. These are the options open to anyone who wishes to participate in the Board's proceedings. Evidence and letters of comment provide information to the Board that the Board considers in reaching its decisions.

In this case, Environment Canada has filed a number of letters of comment, including the two that are the subject of this motion.

Mr. Godsoe has provided no authority for the proposition that information or evidence produced during the hearing process must be disregarded if there is a bias indicated in that information or evidence. The Board, as the decision maker, must have no bias. Those that appear before the Board are under no such obligation.

Parties who file evidence can be cross-examined on that evidence. This allows the evidence to be tested and its reliability determined. Those who submit letters of comment cannot be cross-examined. However, under subsection 30(3) of the *National Energy Board Rules of Practice and Procedure, 1995*, a party may provide a reply to a letter of comment.

The Board takes the fact that a letter of comment cannot be the subject of cross-examination and the reply to such a letter into account in considering the information provided in the letter of comment. The possibility of bias on the part of a writer of a letter of comment or of a witness is not a basis for disregarding either the letter of comment or evidence. It is a matter to be considered in determining the weight to be attached to the information or evidence.

Accordingly, the Board is not persuaded that it should disregard the letters from Environment Canada as suggested by SE2. They will remain as part of the record in this proceedings. It follows that it is not necessary to provide Environment Canada, who is not a party, with an opportunity to respond to SE2's motion.

Regarding the issue of the Board retaining a consultant, the Board is of the opinion that it is up to the applicant to make its case and to provide sufficient evidence to support the application. Similarly, it is up to those opposed to the application to provide evidence to support their position. As a quasi-judicial tribunal, the Board does not usually adduce evidence of its own regarding applications before it. Accordingly, the Board denies SE2's motion that the Board retain an independent consultant to review the issue of the potential bird strikes on the IPL in order to provide evidence on this issue.

10 Jul 2003 Ruling on Motion by Mr. Tilgner asking the Board to reverse ruling regarding questioning of Government Intervenors¹

On Monday, 7 July 2003, the Board upheld objections by Mr. Lusk, counsel to the Applicant, SE2, to certain questions that Mr. Richard Peachey asked witnesses called by the Government Intervenors. The next day Mr. Harald Tilgner brought a motion asking the Board to reverse those rulings [which the Board treated as an application for review]².

After hearing Mr. Tilgner's application, the Board heard from Mr. Peachey, Mr. Yardley on behalf of the Government Intervenors, and Mr. Lusk. The Board also heard Mr. Tilgner in reply.

The Board has reviewed its decisions on the objections raised by Mr. Lusk.

Mr. Tilgner based his request on a General Guide to the Hearing Process provided to parties at the start of this hearing. The General Guide said that intervenors would be called for cross-examination of other intervenor witnesses. On that basis, he submitted that he had formed the impression that intervenors could ask questions of other intervenor witnesses for clarification purposes. It appears that Mr. Tilgner brought his motion on behalf of other intervenors, as there was no indication that he had planned to conduct such cross-examination himself.

The General Guide did not mention anything about the type of questions that may be asked and has to be read in the context of other Board material that will be discussed further in this ruling. We are of the opinion that there is nothing in the General Guide that would suggest that questions that are improper would be allowed. In any event, a general document such as this cannot override the rules of natural justice as they are to be applied in the context of a particular hearing.

Mr. Peachey's questions were to Dr. Robert Caton, Mr. Michael Lepage, Mr. Bruce Thomson, and Dr. Ian McKendry. Mr. Lusk, on behalf of SE2, objected to these questions on the basis that Mr. Peachey was not adverse in interest to the Government Intervenors.

1 Transcript EH-1-2000, 10 July 03, Vol. 31, para. 45968-45993.

2 Transcript EH-1-2000, 8 July 03, Vol. 29, para. 43765.

During argument on the original objections to Mr. Peachey's questions, Mr. Peachey cited Appendix C to the Board's Procedural Update, dated 15 May 2003, Exhibit A-164, entitled "Sweetheart Cross-Examination". This update was issued in response to questions that had been raised by intervenors at public information sessions held by Board staff on 9 and 10 May 2003 in Abbotsford.

Appendix C noted that previous Board Procedural Updates dated 1 May 2003 and 12 February 2003 had indicated that cross-examination "was only going to be permitted between parties who are adverse in interest". The Appendix referred to and quoted a ruling made by the Board on 13 January 1987 in the TCPL RH-3-86 hearing. That ruling expressed Board concern with "friendly" cross-examination "that serves only to prop up a position already on the record or that results in repetitious evidence." It went on to say, and I quote again.

However, restraints that may reasonably be imposed on cross-examination will depend on the nature of the Hearing, the interests of the parties involved, and the procedures adopted in the best interest of fair and just proceedings and should be imposed in light of the circumstances of each hearing.

The ruling stated the Board's opinion regarding cross-examination of a party not adverse in interest was based upon the circumstances of the case that was then before it. Thus the ruling made it clear that decisions must be based upon the particular circumstances of each case.

Mr. Peachey submitted that Appendix C led him to believe that he could ask questions to "fully establish all the facts and evidence upon which [his] position is based" and "to elicit new facts or information relevant to the issues before the Board and useful to the resolution of those issues."

However, Appendix C made it clear that attempts to cross-examine witnesses not adverse in interest could result in objections on which the Board would have to rule. The ruling in RH-3-86 also indicated that in many of the Board's hearings:

There is no dispute or action at law per se and that its proceedings do not always resemble the adversary system. It would be difficult, in such instances, to clearly identify those parties adverse in interest and those sharing a similar position on some of the issues.

That is not the case in this hearing. Mr. Peachey freely admits his opposition to SE2's Application, as do the Government Intervenors.

The Board has a duty to be fair to all parties. The fairness of questions on cross-examination of parties not adverse in interest can only be considered within the context of the hearing. It cannot be determined before the hearing.

Notwithstanding that there may be portions of the testimony of Government Intervenor witnesses that Mr. Peachey may not agree with, his purpose in cross-examining these witnesses is to support his opposition to the Application. That is the same purpose for which the Government Intervenors called these witnesses. Thus these parties, and their witnesses, are not adverse in interest.

Even though Mr. Peachey has submitted that some of his questions were for clarification, he acknowledged that the responses could lead to larger issues. He also acknowledged that at least one of his questions was not merely for clarification. These questions fall squarely within the ambit of the rule against sweetheart cross-examination. Allowing these questions to be answered would be unfair to the Applicant, as the answers would lead to new evidence for which the Applicant would not be prepared. The remedy to this unfairness would be an adjournment to the proceedings to allow the Applicant to respond to the new evidence. In the Board's view this would not be appropriate at this late stage of the proceeding, as it could result in substantial cost to all parties.

Mr. Peachey's expectation, based on Appendix C, that he would be allowed to ask these questions is not a basis for allowing this unfairness. The Board's previous Procedural Updates indicated that cross-examination would only be permitted between parties adverse in interest. The Chairman's comments on 3 June 2003 at paragraph 24310 of the transcript repeated that position.

Although not the basis for our decision on this matter, the Board notes that Mr. Peachey did have an opportunity to obtain the evidence he was seeking by way of cross-examination of Government Intervenor witnesses through the information request process, where the rule against sweetheart cross-examination does not apply. The IR process allows information to be obtained in a timely fashion that allows other parties to deal with it at the hearing. This is not to imply that any questions that could have been asked by way of IR will automatically be disallowed in cross-examination.

The Board has relaxed its usual procedures in an attempt to be responsive to the requirements of the individual intervenors in this proceeding. It has simplified procedures for Option 1 intervenors. It has conducted several public information sessions. It has issued a number of procedural updates. Within the hearing itself, we have allowed intervenors to make oral presentations and argument out of order and before SE2 has completed its case. At times this was over the objections of SE2. There are, however, limits to the extent to which the rules of natural justice can be relaxed.

At times Mr. Yardley seemed to imply that the intervenors opposing SE2 who would face the possible emissions from the power plant may be entitled a greater degree of fairness than a "mere Applicant." The Board does not accept this submission.

Accordingly the Board upholds Mr. Lusk's objections to Mr. Peachey's questions, and they need not be answered. Mr. Peachey, during argument, provided other questions that he wanted to ask. The Board considers those questions to be inappropriate for the same reasons given.

Board counsel's question raises a different issue. Board counsel are neither adverse nor similar in interest to any of the parties. Thus, the question of sweetheart cross-examination does not arise. Board counsel is allowed a broad latitude to ask questions to ensure that the Board has a complete record upon which to make its decision. At the same time, the rules of natural justice require that an Applicant not be taken by surprise by evidence that it does not have an opportunity to respond to.

Dr. McKendry's answer to Board counsel's question included reference to large field campaigns and to very complex instrumentation used in these campaigns. Dr. McKendry noted that he personally only had a minor part in these campaigns.

Having regard to the nature of this evidence and its acknowledged complexity, it would be prejudicial to SE2 to have it introduced at this time unless SE2 were given a further opportunity to respond. This would involve considerable cost to all parties. Therefore, the Board's ruling to limit Dr. McKendry's answer is upheld.

For the foregoing reasons, the rulings that have been reviewed as a result of Mr. Tilgner's motion are affirmed.

10 Jul 2003 Ruling on request of Mrs. Peachey to have Mr. Thomson of Environment Canada recalled and to have Hon. David Anderson and Kirk Johnstone of Environment Canada called as witnesses¹

Mrs. Gerda Peachey applied to have Mr. Bruce Thomson, a Government Intervenor witness, recalled after he had been stood down. She also said that she would like to have the Honourable David Anderson, the federal Minister of the Environment and Kirk Johnstone, an Environment Canada employee, called to testify. The Board considered this as an application to subpoena Minister Anderson and Mr. Johnstone.

In her submission, Mrs. Peachey provided the Board with some indication of the areas or issues she wished -- she would like to pursue through questioning of each of the above-mentioned individuals.

After hearing Mrs. Peachey, the Board heard from Mr. Yardley with regard to the request to recall Mr. Thomson. It then heard from Mr. Lusk with regard to all of Mrs. Peachey's requests and from Mrs. Peachey in reply.

With regard to Mr. Thomson, the Board as of the opinion that the ruling regarding Mr. Peachey's questions applies.

Mrs. Peachey is not adverse in interest to the Government Intervenors on whose behalf Mr. Thomson appeared and accordingly her questions would not be proper. Furthermore, the questions she sought to pose to Mr. Thomson in many cases fall outside his area of expertise. The Board will not recall Mr. Thomson.

Minister Anderson is a member of the federal cabinet. Under the *National Energy Board Act*, the cabinet will be required to approve any certificate the Board might issue for the international power line. It would be improper for Minister Anderson to appear as a witness at a proceeding, the results of which may come before him for final approval. The Board will not issue a subpoena to the Honourable David Anderson.

Finally, with regard to Mr. Johnstone, it was clear from Mrs. Peachey's submission that she has had concerns about Environment Canada's evidence for some time and that she felt that Mr.

¹ Transcript EH-1-2000, 10 July 03, Vol. 31, para. 45995-46002.

Johnstone was someone from whom she wanted answers. She has waited until the end of SE2's case before asking that he be required to attend. She has not provided a valid reason for this delay. Although she may be unfamiliar with the Board's procedure, she has had the opportunity to attend the Board's information sessions and to seek information from Board staff.

It would be prejudicial to SE2 and disruptive to this proceeding to grant her request. The Board will not issue a subpoena to Mr. Johnstone.

05 Nov 2003 Ruling on requests of Stó:lō Nation to reopen the oral hearing

On 28 October 2003, the National Energy Board received your letter dated 16 October 2003. In the letter you indicated that you wanted to bring to the Board's attention certain concerns you had with statements made by counsel for SE2 during final reply argument. You go on to make four specific requests of the Board. The effect of these requests, if granted by the Board, would be to reopen the oral hearing to allow the Stó:lō Nation to provide additional argument and introduce additional evidence.

In its application for intervenor status, the Stó:lō Nation identified the following specific issues that it intended to address at the hearing:

The potential impacts or infringements on the aboriginal rights and title of the Stó:lō Nation, and whether there is any justification for those impacts or infringements. Included in this issue is whether there has been adequate, or any, consultation with the Stó:lō Nation.

In addition, the Stó:lō communities are concerned about the impacts of the project within our traditional territory on (i) air quality, (ii) water quantity and quality, (iii) the Fraser River and its fish, and (iv) the health of the Stó:lō people. There may be other concerns that become identified as the NEB proceedings advance.

The Stó:lō Nation again raised the issue of its rights and title and Crown consultation during the Environmental Effects Motion that was argued in Abbotsford, British Columbia from 21 to 23 October 2002. In the Board ruling on that motion dated 9 December 2002, the Board noted that this issue was not relevant to the questions raised by the Motion. The Board went on to state:

However, if the Stó:lō Nation wishes to raise this issue in the course of the proceeding to consider SE2's IPL application, the Board would expect that they would provide evidence of the nature of the rights which they assert and the potential infringement of those rights which may result from any approval of the Project.

On 14 February 2003 the Stó:lō Nation filed its direct evidence. This evidence included material on the "Impacts of SE2 Project to Stó:lō Aboriginal Rights and Title."

On 26 May 2003 the oral hearing began in Abbotsford. The Stó:lō Nation participated in the hearing, which occupied 30 hearing days. Since SE2 indicated that it did not intend to cross examine on the Stó:lō direct evidence, it was adopted by affidavit on 11 July 2003.

The evidentiary portion of the hearing took 23 hearing days and was followed by 7 days of argument. On 16 September 2003, Mr. Ken Malloway presented final argument for the Stó:lō Nation. The hearing concluded on 23 September 2003.

It was not until five weeks after the conclusion of the hearing that the Board received this request to "grant an extension of the hearing process." The only reason given for requesting that the Board accept additional argument is that counsel for SE2, in reply argument, gave information that the Stó:lō Nation claims is "incomplete and therefore inaccurate and misleading."

In the Board's view, SE2 had the right to reply to the argument made on behalf of the Stó:lō, in the same fashion that the Stó:lō had the right to reply to SE2's argument when it gave its argument. This right to reply is a fundamental aspect of fairness. However, disagreement with points raised in reply does not give a right to make further reply, otherwise argument might never end.

If the Stó:lō Nation was of the opinion that SE2's reply argument went beyond proper bounds, the proper time to raise an objection would have been at the time that the reply was given. However, the Stó:lō Nation raised no objection at that time.

It is up to the Board to determine if facts referred to in argument are supported by evidence. The Board, while reviewing the evidence and argument, ensures to its satisfaction that statements and comments made in argument are supported by the evidence on the record, and makes its determination based solely on that record. To do otherwise would breach the principles of natural justice and fairness.

Similarly, the Board is satisfied that the Stó:lō Nation has had an adequate opportunity to file evidence supporting its position on the issues of interest to it and to challenge evidence filed by SE2. It is too late now to seek to introduce further evidence. The Board is in the process of making the decisions that it must make on the application and is of the view that it would be inappropriate and prejudicial to the Applicant, and potentially other parties as well, to reopen the matter at this late date.

The Stó:lō Nation specifically requested an extension to the hearing process to allow the submission of the Traditional Use Study or Traditional Land Use Study. The Board addressed the issue of the Traditional Land Use Study in the Draft Conditions filed at the hearing and circulated to parties on 8 July 2003. The Board made it clear that parties could comment on the Draft Conditions. If the Stó:lō Nation had comments relating to the Traditional Land Use Study, they should have been presented to the Board, at the latest, during final argument.

Accordingly the Board will not grant the requests made by the Stó:lō Nation.

